12458 674
G4

PRELIMINARY PROJECTIONS

Of

ECONOMIC ACTIVITY

In The

AGRICULTURAL, FORESTRY AND

RELATED ECONOMIC SECTORS

Of The

UNITED STATES

And Its

WATER RESOURCE REGIONS

1980, 2000 and 2020

For Use Of The

Water Resources Council
And Cooperating Agencies
For
Comprehensive River Basin Planning

HD
1761
.P745
1967

Prepared by

Economic Research Service
And Forest Service
U. S. Department of Agriculture

August 1967

LIBRARY
APR 19 1979
[redacted]
Denver, Colorado

DATE DUE

124958

PREFACE

This report was issued initially in August 1967. Since that time, a decision was reached by the Water Resources Council to change the population assumption from Series B to Series C. This change and its implication is explained in the memorandum of March 8, 1968 from the Administrator, Economic Research Service to the Executive Director of the Water Resources Council. The initial transmittal memorandum, setting forth the status of the projections, is also included in the report.

9209346
HD 1761 .P745 1967

UNITED STATES DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE
WASHINGTON, D.C. 20250

OFFICE OF THE ADMINISTRATOR

March 8, 1968

MEMORANDUM

TO: Henry P. Caulfield, Executive Director
Water Resources Council

FROM: M. L. Upchurch, Administrator
Economic Research Service

SUBJECT: Adjustment of agricultural and forestry projections to reflect the Series C population assumption

I understand that the economic projections to be provided in the near future to the Water Resources Council by the Office of Business Economics will be based on the Series C population assumption rather than Series B. You will recall that the projections contained in the ERS report to the Water Resources Council in August 1967 was based upon the Series B population assumption. We have been asked informally by Harry Steele about needed adjustments in the agricultural projections to reflect the revised population assumption.

A complete revision of the August report, including other adjustments such as a reconsideration of our export projections, is not feasible in a short period of time. Our next complete revision is scheduled to be available by December 1969. We realize, however, that the effect of the change in population assumption needs to be reflected in some of the Type I comprehensive surveys now underway. Consequently, we have developed a new table showing revised projections of production requirements for 1980, 2000 and 2020.

In those instances where comparable adjustments in the regional projections for ongoing Type I studies are required, we suggest that the revised table be checked against the original, and the percentage adjustments at the regional level be the same as nationally. Projections of income and employment may be adjusted in the same manner. We are asking our field staffs engaged in the Type I study program to make the needed adjustments. If there are any questions on how the adjustments can be made in other areas, staff members of our Natural Resource Economics Division will be available to provide necessary guidance and assistance.

As indicated in my transmittal letter of August 25, 1967, some additional adjustment in the national and regional agricultural projections will be incorporated in subsequent projection reports.

Attachment

/s/ M. L. Upchurch

Appendix Table 1--Adjusted* production requirements for agricultural commodities, United States, 1959-61, with projections to 1980, 2000 and 2020

Commodity	Unit	1959-61	1980	2000	2020
		thousands			
Feed grains (corn equiv.)	Tons	145,128	197,200	244,100	298,700
Corn	"	106,010	141,500	178,400	222,400
Oats	"	17,167	17,800	15,800	11,000
Barley	"	9,995	12,300	12,200	11,000
Sorghum	"	15,445	25,600	37,700	54,300
Food crops					
Wheat	Bu.	1,237,700	1,873,600	2,127,500	2,458,600
Rye	"	27,868	41,400	54,100	71,800
Rice (rough)	Cwt.	54,145	83,300	93,600	107,000
Flaxseed	Bu.	24,605	21,800	27,000	33,500
Soybeans	Bu.	589,257	1,268,900	1,531,900	1,860,900
Peanuts (farm stock)	Lbs.	1,705,500	2,428,000	3,179,000	4,133,000
Sugar	Tons	3,290	7,300	11,400	16,500
Dry beans	Cwt.	19,048	22,900	28,900	36,600
Dry peas	Cwt.	3,927	5,300	6,100	7,200
Potatoes	Cwt.	265,609	319,100	420,600	551,200
Sweet potatoes	Cwt.	16,508	17,500	23,200	30,600
Fruits and Vegetables					
Citrus fruits	Tons	8,028	11,000	14,100	17,900
Noncitrus fruits	Tons	9,952	12,600	17,200	22,900
Vegetables	Cwt.	403,902	615,900	801,800	1,034,600
Tree nuts (shelled)	Lbs.	170,000	147,700	275,700	436,000
Fiber crops					
Cotton	Lbs.	7,191,300	8,083,000	9,405,000	11,064,000
Tobacco	Lbs.	1,934,200	2,134,000	2,668,000	3,337,000
Livestock and products					
Beef and veal	Lbs.	28,898,500	45,506,000	60,588,000	79,506,000
Pork	Lbs.	20,220,000	25,947,000	33,990,000	44,056,000
Lamb and mutton	Lbs.	1,683,000	1,630,000	2,164,000	2,831,000
Farm chickens	Lbs.	1,251,700	1,396,000	1,824,000	2,362,000
Turkeys	Lbs.	1,600,900	3,413,000	4,448,000	5,746,000
Eggs	No.	62,302,000	72,613,000	95,251,000	123,886,000
Milk	Lbs.	123,460,700	139,372,000	181,490,000	234,226,000
Broilers	Lbs.	6,207,100	10,263,000	13,293,000	17,094,000

* Population projections changed from Series B to Series C.

UNITED STATES DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE
WASHINGTON, D.C. 20250

Office of the Administrator

August 25, 1967

MEMORANDUM

TO: Henry P. Caulfield, Executive Director
Water Resources Council

FROM: M. L. Upchurch, Administrator
Economic Research Service

SUBJECT: Preliminary Projections of Economic Activity in the Agricultural, Forestry and Related Economic Sectors of the United States and its Water Resource Regions 1980, 2000 and 2020

I am pleased to submit the attached report on "Preliminary Projections of Economic Activity in the Agricultural, Forestry and Related Economic Sectors of the United States and its Water Resource Regions 1980, 2000 and 2020" in accordance with the existing cooperative arrangement with the Water Resources Council. These projections have been carefully coordinated with the projections work of the Office of Business Economics also being carried out under cooperative agreement with the Water Resources Council. Projections on forestry and related sectors of the economy were provided by the Forest Service.

Since the material in this report was developed, new information has become available which will lead to subsequent revision. For example, recent trends in birth rates suggest the adoption of Series C population projections developed by the Bureau of the Census. We understand that the Office of Business Economics is currently reconsidering the population projections and that the adoption of Series C is imminent. Other developments in the agricultural sector of the economy, including prospects for international trade, suggest other changes that will likely offset the downward adjustment in projected population. A preliminary analysis of these changes indicates that a revision of the projections of crop and pasture output and land use would be minimal. However, such changes will be included in subsequent projections efforts in the Economic Research Service for the Water Resources Council.

We have received some requests for detailed working materials underlying this report. Statistical information of this nature will be provided to our field staff who are cooperating with other federal agencies in surveys being carried out under the auspices of the Water Resources Council. We propose to handle the information in this manner because of statistical limitations inherent in the detailed materials. In working with the technicians of the other Agencies, our field staff will have full opportunity to explain these limitations.

You will note the Foreword of the report includes a brief summary on the status of our projections work for the Council. Material in the text includes a summation of basic assumptions underlying the projections. These assumptions are, of course, subject to revision and updating as indicated above. However, all underlying assumptions are subject to periodic review as new information becomes available. Even with periodic updating, long-term projections are imprecise approximations of future levels of economic development. We suggest, therefore, that the Council's use of these materials take account of the uncertainties underlying the projections--particularly for the 2000 and 2020 projection years.

/s/ M. L. Upchurch

TABLE OF CONTENTS

	Page
Preface	i
Foreword	ix
National Production of Food, Fiber, and Timber Products	1
Agricultural Land Use	10
The Agricultural Resource Base	19
Water Resource Region Projections	23
Income and Employment	26
Appendix	37

LIST OF TABLES

TABLE		PAGE
1.	Preliminary projections of production of major agricultural product groups, United States, 1980, 2000, and 2020	2
2.	Production of industrial timber products, 1962; with preliminary projections to 1980, 2000, and 2020, United States	3
3.	National economic framework, United States, 1960; with projections for 1980, 2000, and 2020	5
4.	Per capita use of major farm products, United States, 1959-61 average with projections to 1980	7
5.	Foreign market: Imports and exports of major farm products, United States, 1959-61 with projections to 1980	8
6.	Acreages of major crops, United States, 1959 with projections to 1980, 2000, and 2020	16
7.	Land utilization: United States, 1959 with preliminary projections to 1980, 2000, and 2020	20
8.	Commercial forest area, Water Resource Regions, 1962 with preliminary projections to 1980, 2000, and 2020	22
9.	Realized gross farm income: 1959-61 average with preliminary projections to 1980, 2000, and 2020, United States and Water Resource Regions	27
10.	Income (payrolls) in the timber and wood products industries, 1962, with preliminary projections to 1980, 2000, and 2020, Water Resource Regions	28
11.	Income (payrolls) in the pulp, paper, and allied products industries, 1962, with preliminary projections to 1980, 2000, and 2020, Water Resource Regions	29
12.	Income (payrolls) in forest management, 1962, with preliminary projections to 1980, 2000, and 2020, Water Resource Regions	30
13.	Number of farm workers, 1959-61 average with preliminary projections to 1980, 2000, and 2020, United States and Water Resource Regions	32

TABLE PAGE

14. Employment in the lumber and wood products industries, 1962, with preliminary projections to 1980, 2000, and 2020, Water Resource Regions ---------- 33

15. Employment in the pulp, paper, and allied products industries, with preliminary projections to 1980, 2000, and 2020, Water Resource Regions ---------- 34

16. Employment in forest management, 1962, with preliminary projections to 1980, 2000, and 2020, Water Resource Regions -- 35

Appendix Tables ---------- 38-91

FOREWORD

Materials contained in this report were prepared as a result of an agreement between the Interdepartmental Staff Committee of the ad hoc Water Resources Council; and the Office of Business Economics, U. S. Department of Commerce; and the Department of Agriculture dated March 6, 1964. This agreement arranged for a program of interregional analysis and projections of economic activity covering the United States and its major Water Resource Regions for use in river basin planning. Early in 1967, the Council of Representatives, Water Resources Council, agreed to an extension of the original agreement. This change resulted in extending the agreement for approximately eighteen months and modifying it to include greater geographic detail.

The Office of Business Economics, U. S. Department of Commerce agreed to prepare data and projections for the overall national economy and the nonagricultural sectors of the national and regional economies. The elements describing the projected national economy include population, total employment, gross national product, personal income and per capita income. The U. S. Department of Agriculture agreed to prepare data and projections for the agricultural economy. These data and projections were to include production, land use, agricultural employment, and income. The projections, although developed by separate agencies, were to be closely coordinated so that they would be consistent and based upon similar sets of assumptions.

The U. S. Department of Agriculture commitment now consists of four phases. The first is the development of a file of historic data relating to the agricultural economy and a system to retrieve the data in a form useful for river basin planning. The second phase consists of preparing preliminary projections of the agricultural economy for the United States and its major water resource regions. The third phase calls for similar preliminary projections for subbasin areas within the major water resource regions. This phase is to be completed by the end of calendar year 1967. The fourth phase is to produce a set of revised projections with alternative assumptions about key elements for each water resource region and subbasin by December 1969.

Key elements of the information system required by Phase I are now operational. This report contains limited historical information from that data system because it is supplied to each river basin study on request. Requests from the following Type I studies were met: North Atlantic, Missouri, and Columbia-North Pacific as well as requests from studies involving smaller river basins.

The following report represents the output of the second phase described above. Data presented here are preliminary projections of food and fiber production, agricultural income, employment and land use for the United States and its 17 Water Resource Regions. The national totals exclude Hawaii and Alaska.

The projections are based upon examination of historical trends, analysis of current relationships and an evaluation of foreseeable developments. The major forces considered in the projections are population growth; shifts in consumer demands, industrial and other uses of agricultural commodities; livestock feeding efficiencies and feed ration composition; foreign demand for agricultural products; and the advance of technology in the production of crops and livestock. Additional comments about each of the above elements are included in the sections that follow.

The preliminary projections of total domestic production of industrial wood for 1980 and 2000 are taken from the Forest Service report "Timber Trends in the United States." Estimates for 2020 are added to meet the objectives of river basin planning. The projections of timber product output by major water resource regions and the related estimates of employment and payrolls are based to a large extent on prospective timber supplies. These are based on projections of timber growth in the Eastern regions and projections of allowable cut in the Western regions. All projections are subject to revision when more detailed studies of forest resource supplies and development of timber-based industries in each region are completed at regional Forest Experiment Stations.

NATIONAL PRODUCTION OF FOOD, FIBER, AND TIMBER PRODUCTS

By 1980, the growing economy of the United States is expected to consume about two-fifths more agricultural products than the average production during the 1959-61 period (Table 1). Use of industrial timber products, excluding pulpwood, will be about one-fourth above the 1962 level, while pulpwood use will exceed the 1962 production by more than four-fifths (Table 2).

Largest increases are projected to occur in oil crops. Production of these crops in 1980 is projected to be double the 1959-61 average. Production in several commodity groups is projected at one and a half times the 1959-61 average. These groups include the following: hay and forage crops; food grains; vegetables, fruits, and sugar crops; and meat animals and poultry products. Increases in production of feed grains, cotton, tobacco, milk, and miscellaneous crops range from 15 to 37 percent.

Further increases are projected for the years 2000 and 2020 as population continues to grow and the expanding economy provides an expanding market for agricultural and forestry output. Pulpwood production in 2000 is projected at three times the 1962 level. By the year 2000, production of livestock and livestock products as well as food grains is projected to be nearly double the 1959-61 average with further significant increases shown for the year 2020. Production of feed crops as well as oil and fiber crops is projected to advance less rapidly, but by 2020 will still be more than twice the 1959-61 average. Output of industrial timber products will increase a little more than a half during the projection period.

These projections, as well as all others in this report, represent an economy where agricultural production is in balance with estimated future demand. The projections of future demand draw on numerous analyses and appraisals. Some are based upon formal statistical models, others on trends and a knowledge of factors affecting them. Accordingly, the projections consider, implicitly or explicitly, important factors which will shape the growth and development in agriculture in the years ahead.

Further reductions in the number of farms are in prospect as smaller farms are consolidated into larger commercial family farms. Continued substitution of capital and other inputs for labor and land as well as other shifts in the organization and use of resources will result in great gains in productivity in farming. Other factors influencing the future agricultural economy will be discussed in subsequent portions of this report.

Table 1.--Preliminary projections of production of major agricultural product groups, United States, 1980, 2000 and 2020 1/

Commodity group 2/	Projections		
	1980	2000	2020
	Index	Index	Index
Feed crops	140	182	234
Feed grains	137	XXX	XXX
Hay and forage	147	XXX	XXX
Food crops	150	196	261
Food grains	153	XXX	XXX
Vegetables, fruits, sugar	153	XXX	XXX
Other food crops	123	XXX	XXX
Oil and fiber crops	144	182	235
Oil crops	207	XXX	XXX
Cotton	117	XXX	XXX
Tobacco	115	XXX	XXX
Livestock and products	142	196	273
Meat animals	152	XXX	XXX
Milk	118	XXX	XXX
Poultry products	147	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay, silage, straw, stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Table 2.--Production of industrial timber products, 1962; with preliminary projections to 1980, 2000 and 2020, United States 1/

Commodity 2/	Unit	1962	Projections		
			1980	2000	2020
	1,000	1,000	1,000	1,000	1,000
Industrial timber products:					
Saw logs (lumber)	Cu. ft.	5,190.0	6,110.0	7,170.0	7,870.0
Veneer logs (veneer and plywood)	Cu. ft.	860.0	1,540.0	2,160.0	2,400.0
Other miscellaneous industrial timber products	Cu. ft.	465.0	460.0	460.0	460.0
Total	Cu. ft.	6,515.0	8,110.0	9,790.0	10,730.0
Pulpwood	Cords	41.7	78.4	128.6	142.2

1/ Estimates exclude Hawaii, Alaska, and the Tennessee Valley.

2/ Industrial timber products includes all round timber products harvested from the forests, except fuelwood, and used as the wood raw material in the Lumber and Wood Products Industries (Major group 24 as defined in the Standard Industrial Classification Manual). Saw logs are used to manufacture lumber; veneer logs to manufacture veneer and plywood; and other miscellaneous timber products to manufacture a host of items such as cooperage, utility poles, and charcoal. Pulpwood includes the wood raw material used in the Pulp, Paper, and Allied Products Industries (Major group 26 as defined in the Standard Industrial Classification Manual) for the manufacture of wood pulp. The volumes shown include roundwood harvested directly from the forests and plant byproducts, obtained from other wood manufacturing plants such as sawmills and veneer and plywood plants, and used in the manufacture of wood pulp.

Several important forces that affect the future agricultural economy were explicitly considered in developing the projections of demand for agricultural products. Among these are the following:

(1) Population growth;

(2) Rising per capita disposable income, changes in consumer tastes and their influence on per capita uses of agricultural products;

(3) Industrial and other uses of agricultural commodities;

(4) Livestock feeding efficiencies and composition of the feed ration; and

(5) The foreign market for agricultural products.

Projected domestic consumption of food commodities for each target date was derived by applying projected per capita consumption rates to projected population and is the principal determinant of projected production. Quantities were projected which represent industrial and other uses of agricultural products. These were added to domestic consumption to derive projections of total domestic production requirements. Net demand from the foreign market was added to the projected domestic requirements. Projections of feed grains, hay and other harvested forage were derived by estimating feed requirements for projected livestock output and adding to that the projected nonfeed uses of certain crops in this category. Although per capita consumption was projected to remain unchanged after 1980, changes in total projected production are not equal in all cases to changes in population after that date. This occurs because rates of change in the other factors are different from those for population.

National Economic Framework

In order to develop projections of this type, certain assumptions relating to the basic economy and its structure must be established. The most significant of these will be presented in this report. The initial assumptions cover the general economic indicators and provide a framework within which the remaining projections can be developed. Projections of these general economic indicators--population, employment, gross national product, and personal income--were supplied by the Office of Business Economics, U. S. Department of Commerce. Of most significance is the projected increase in these aggregate economic variables (Table 3).

An increasing population will require expanded output of agricultural products. Rising employment levels will furnish alternative employment opportunities for workers leaving the farm sector. A sustained level of economic growth (measured by gross national product) will provide a favorable general economic environment with sustained demand for farm output.

Population projections were based on the Series B estimates of the Bureau of the Census. One of four alternative projection levels, Series B assumes moderately high fertility rates which are slightly lower than the rates prevailing since World War II. On this basis, the 1980 population of the United States is projected to increase by 65.3 million persons, about 35 percent over the 1960 level. By the year 2000, the population is projected to increase by 92.9 million over the 1980 level, while a further increase of 130.9 million is expected between 2000 and 2020. Thus, the population in 2020 is projected to be about two and half times the 1960 level.

Table 3.--National economic framework, United States, 1960; with projections for 1980, 2000, and 2020

Item	Unit	1960	Projections		
			1980	2000	2020
Population 1/	Million	180.7	245.3	338.2	469.1
Employment 2/	Million	66.4	94.8	130.6	181.2
Gross national product 3/	Billion Dollars	4440	1,001	2,144	4,686
Personal income 3/	Billion Dollars	352	785	1,680	3,630
Per capita income 3/	Dollars	1,955	3,200	4,967	7,738

Source: Office of Business Economics, U. S. Department of Commerce as adapted by the Water Resources Council for river basin planning.

1/ Includes Armed Forces abroad.

2/ Census of Population concept; excludes those stationed overseas.

3/ In terms of 1954 dollars.

The consumption of the major agricultural products per person has changed with rising incomes, shifting tastes, substitute products, and lower relative prices. However, the projections of per capita consumption inherent in the aggregate projections contained in this report were held unchanged beyond 1980. This assumption was made primarily because of limitations of data, but was also partially based upon the assumption that further increase in personal income beyond the 1980 level would have little significant influence on per capita consumption. The influence of substitute products that have not yet been developed is virtually impossible to project. It

is equally difficult to project significant changes in consumer tastes. Consequently the per capita projections represent our best quantification of factor influences now known or reflected in historic data. The projected prices for farm products inherent to these projections generally fall in the range of recent years. Projected prices for crops are slightly lower than in recent years. On balance, livestock prices are projected to be somewhat higher than crop prices in 1980, a reversal of their 1960 relationship.

Per capita consumption of meats is projected to increase throughout the 1960 to 1980 period (Table 4). Consumption of eggs and dairy products is projected to decline, as will consumption of cereal grain and cotton. Projected vegetables and fruit consumption per person will increase while sugar and tobacco rates are projected to remain essentially unchanged from the 1959-61 average consumption. Oil crops consumption will increase markedly as industrial uses expand. Most of these projections were based upon historic trends and evaluated from the standpoint of being reasonable or realistic.

Projecting international developments and foreign trade patterns is difficult and is quite hazardous beyond the immediate future. We can assume that certain rates of import and export may be stable and predictable through a decade or two, but beyond that range international trade is unpredictable. In any case, the foreign market is subject to wide variations due to international policy changes. In this report, foreign trade levels were projected for 1980 and remained at those levels for 2000 and 2020. Analyses to be incorporated in the revised projections, referred to in the Foreword of this report will develop alternative levels of foreign demand the effect on U. S. agricultural output will be evaluated. Foreign market projections assume levels that would be attained if quantity increase for each decade from 1960 to 1980 closely matched the quantity increase of the 1950-60 decade.

In this report, both import and export volume is expected to increase over the 1959-61 level, but some decreases will take place in particular commodities (Table 5). Increases are projected for imports of beef, pork, milk, vegetables, noncitrus fruits and tree nuts. Decreases are expected for imports of lamb and mutton, barley, rye, oats, rice, and sugar. Exports of livestock and livestock products, corn, wheat, rice, sorghum, soybeans, vegetables, fruits, cotton, and tobacco are projected to increase. These increases are greatest in the case of milk products, corn, grain sorghum, wheat, and soybeans. On balance, the foreign market demand for United States agricultural products is projected to increase considerably above the 1959-61 average level. However, in 2000 and 2020 it is projected as a smaller portion of total production than in 1980.

An important consideration in projecting feed crop production is the changes in livestock feeding efficiencies and composition of feed rations. Livestock feeding efficiencies are projected to increase moderately during the projection

Table 4.--Per capita use of major farm products, United States, 1959-61 average with projections to 1980

Commodity	1959-61	1980
	Pounds	Pounds
Livestock & livestock products:		
Beef (carcass wgt.)	84.7	112.0
Veal (carcass wgt.)	5.8	5.0
Pork (carcass wgt., excluding lard)	64.8	65.5
Lamb and mutton (carcass wgt.)	4.9	3.5
Chickens (ready to eat)	29.1	34.5
Turkeys (ready to eat)	6.6	11.0
Eggs (number)	337.0	290.0
Milk (fat solids basis)	657.0	570.0
Grain crops:		
Corn	46.0	52.0
Oats	7.3	7.0
Barley	1.4	1.3
Wheat	165.0	143.0
Rye	1.4	1.3
Rice (rough)	8.1	10.0
Oil crops & miscellaneous:		
Soybeans	149.2	217.4
Peanuts (farm stock)	7.2	9.1
Flax	7.0	4.0
Cotton	23.4	20.5
Tobacco	7.6	7.6
Food crops:		
Sugar (raw equivalent)	104.0	104.0
Dry beans	7.7	7.4
Dry peas	.4	.1
Potatoes	110.0	110.0
Sweet potatoes	6.4	5.5
Vegetables (fresh basis)	205.0	216.0
Melons (fresh basis)	25.0	20.0
Citrus fruits (fresh basis)	82.0	84.0
Non-citrus fruits (fresh basis)	113.0	122.0
Tree nuts (shelled)	1.6	1.6

Table 5.--Foreign markets: Imports and exports of major farm products, United States, 1959-61 with projections to 1980 1/

Commodity	1959-61 Average		1980	
	Imports	Exports	Imports	Exports
	Million pounds		Million pounds	
Livestock & livestock products:				
Beef and veal (carcass wgt.)	959	56	1,850	150
Pork (carcass wgt., excluding lard)	186	140	275	225
Lamb and mutton (carcass wgt.)	97	2	43	2
Chickens (ready to eat)	0	190	0	290
Turkeys (ready to eat)	0	21	0	40
Eggs	37	880	19	562
Milk (fat solids basis)	647	1,153	871	4,539
Grain crops:				
Corn	56	14,728	56	40,880
Oats	48	947	0	800
Barley	835	4,618	70	4,410
Sorghum	0	5,005	0	11,061
Wheat	420	37,842	480	66,000
Rye	140	381	50	390
Food crops:				
Rice (rough)	40	3,120	20	5,180
Sugar (raw equivalent)	11,478	106	10,300	106
Dry beans	9	237	18	378
Dry peas	0	205	0	322
Potatoes	70	390	120	340
Sweet potatoes	0	7	0	7
Vegetables and melons (fresh basis)	890	1,280	1,200	2,500
Citrus fruit (fresh basis)	122	1,789	158	2,194
Non-citrus fruit (fresh basis)	4,778	1,651	6,142	2,026
Tree nuts (shelled)	236	26	322	87
Oil crops & miscellaneous:				
Flaxseed	0	313	0	280
Soybeans	0	8,492	0	25,000
Peanuts (farm stock)	1	70	1	50
Cotton	76	3,122	100	3,500
Tobacco (farm wgt. basis)	162	493	211	572

1/ Projections are preliminary.

period. This is reflected by reductions in the feed required per pound of livestock produced, as shown in Figure 1. The projected feed ration contains a higher proportion of concentrates than in the recent past. The combined effect of these two factors resulted in increased feed requirements consistent with an expanded need for meat. For some species, for example, beef and veal, the requirement for concentrate feed increases more rapidly than the projected production of beef and veal.

AGRICULTURAL LAND USE

The national projections of production, shown in table 1 for the major agricultural products, were translated into acreage requirements. Table 6 shows the 1959 acreage and the projected acreages for 1980, 2000, and 2020 for the major commodity groups, including cropland pasture. These acreage projections were determined by dividing the projected production by the projected levels of productivity (per acre) for 1980, 2000, and 2020.

Improvements in agricultural production technology have accounted for most of the increased productivity during the past twenty years. A general measure of these forces is provided by the trends in average crop yield per acre. The most important source of this increase was expanded use of commercial fertilizer. Shifts of higher value crops to better soils, improved varieties, and increased use of pesticides also contributed to larger yields.

The 1980 yield estimates reflect a continuation of these recent trends in agricultural productivity. Particular developments that could result in increased production beyond 1980, are largely speculative. However, it is assumed that new breakthroughs will continue in the agricultural research sector, therefore, crop yields were projected to increase from 1980 through 2020. For most of the major crops, the yield advances were projected to increase faster through 1980 than in subsequent years (Figures 2-6).

In 1959, about 264 million acres of cropland was used to produce feed for livestock, (Table 6). Feed grains were harvested from almost half of this acreage, while the remainder was used for production of roughage. By 1980, the acreage of cropland used for the production of feed crops is projected to decline to about 201 million acres. A slightly higher proportion of this acreage will be used for roughage production than was used in 1959. After 1980, small increases in the acreage used to produce feed crops were projected for 2000 and 2020.

Acreage for food crops shows an upward trend through the projection period. These crops utilized about 64 million acres of cropland in 1959. By 1980, this acreage will increase to about 71 million acres and by 2020 to 82 million acres.

The production of oil, fiber, and miscellaneous crops will use more land in the projection period than in 1959. In 1980, the acreage will increase to a little more than 64 million from the 47.5 million acres used in 1959. A slight decline from the 1980 level is projected for 2000 but by 2020 the acreage will be greater than the 1980 level by 1.7 million.

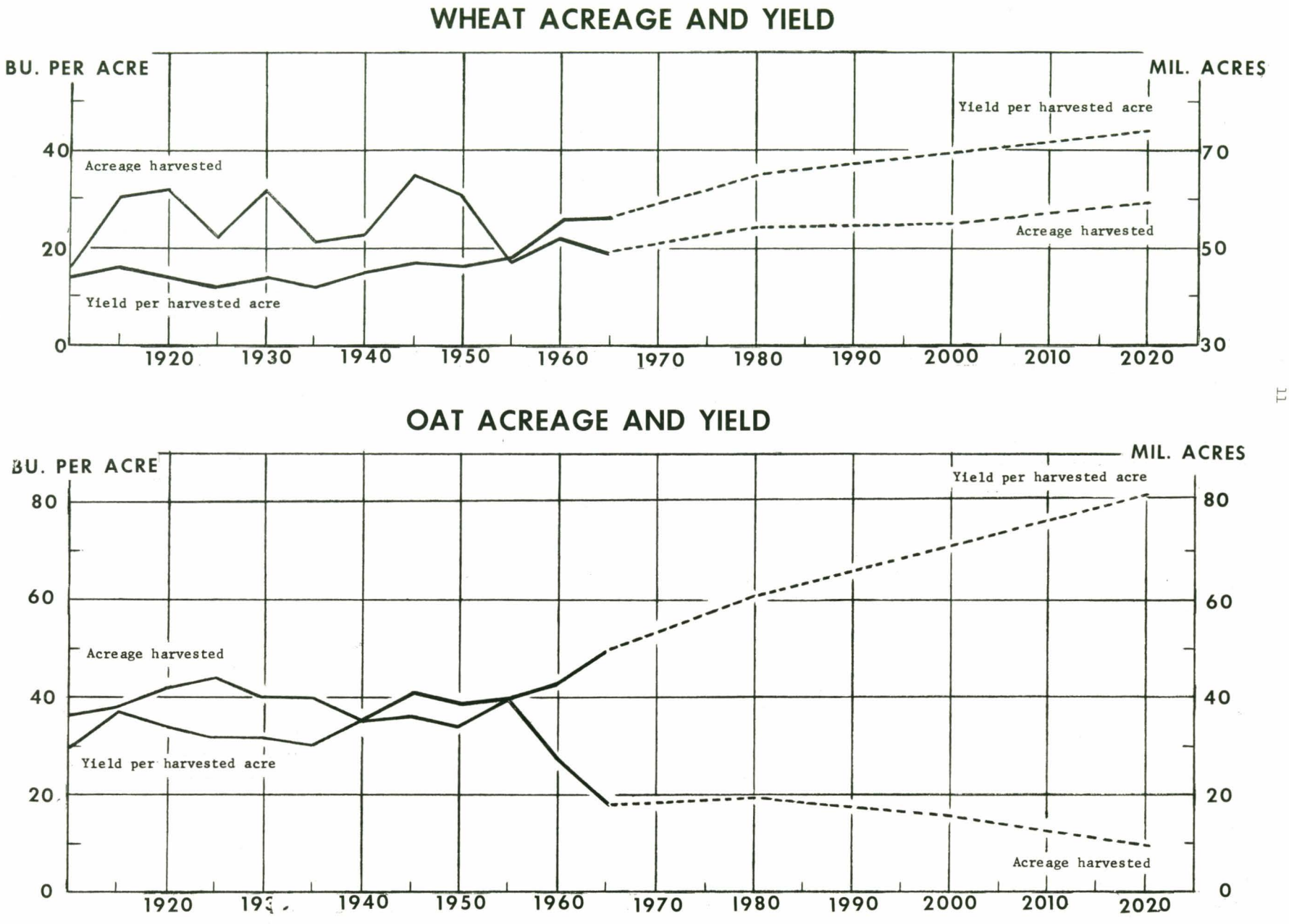

WHEAT ACREAGE AND YIELD
BU. PER ACRE
MIL. ACRES
Yield per harvested acre
Acreage harvested
Acreage harvested
Yield per harvested acre
0
20
40
30
50
70
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
OAT ACREAGE AND YIELD
BU. PER ACRE
MIL. ACRES
Yield per harvested acre
Acreage harvested
Yield per harvested acre
Acreage harvested
0
20
40
60
80
1920
1940
1950
1960
1970
1980
1990
2000
2010
2020

Figure 1

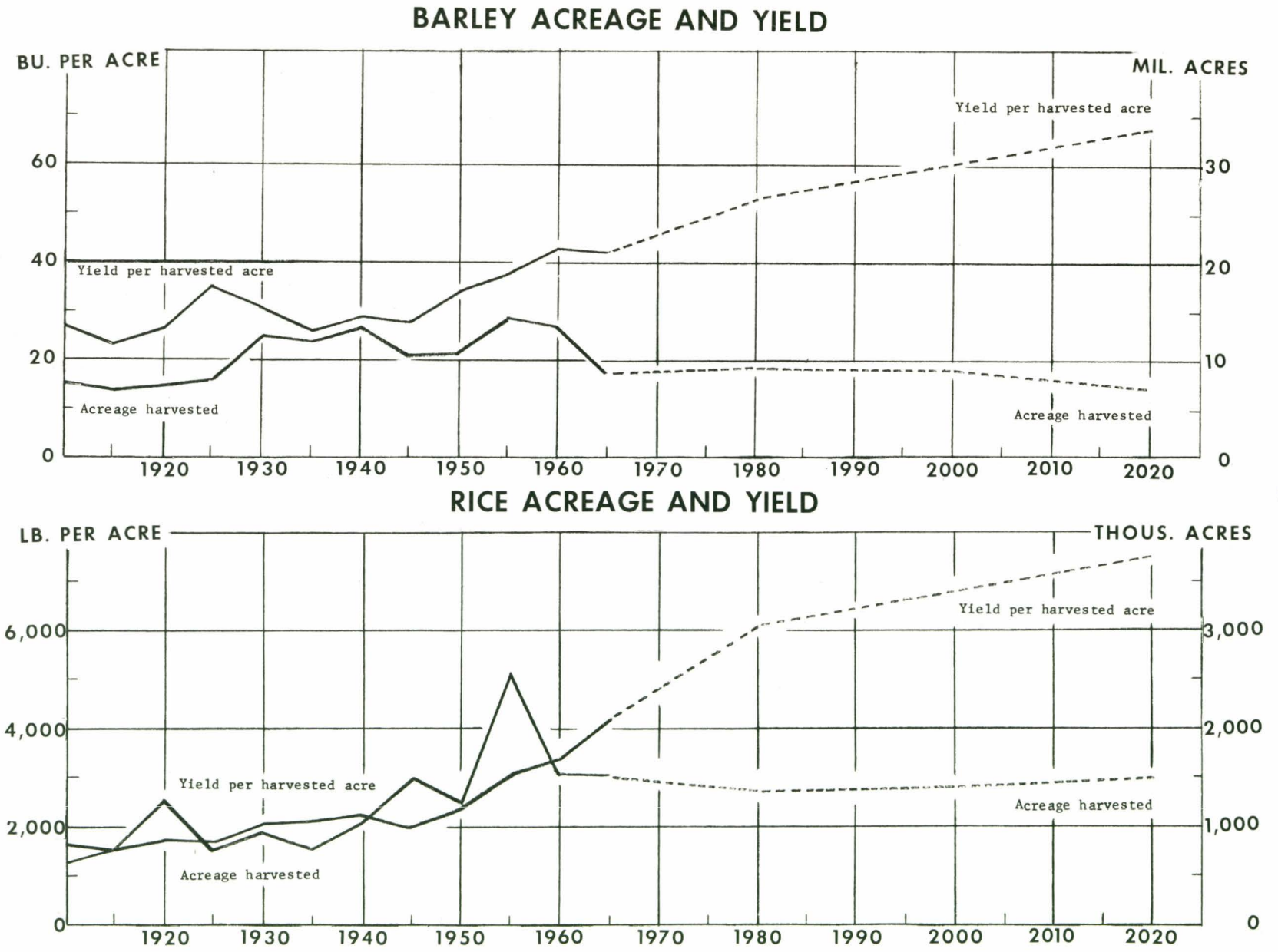

BARLEY ACREAGE AND YIELD
BU. PER ACRE
MIL. ACRES
Yield per harvested acre
Yield per harvested acre
Acreage harvested
Acreage harvested
60
40
20
0
30
20
10
0
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
RICE ACREAGE AND YIELD
LB. PER ACRE
THOUS. ACRES
Yield per harvested acre
Yield per harvested acre
Acreage harvested
Acreage harvested
6,000
4,000
2,000
0
3,000
2,000
1,000
0
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020

Figure 2

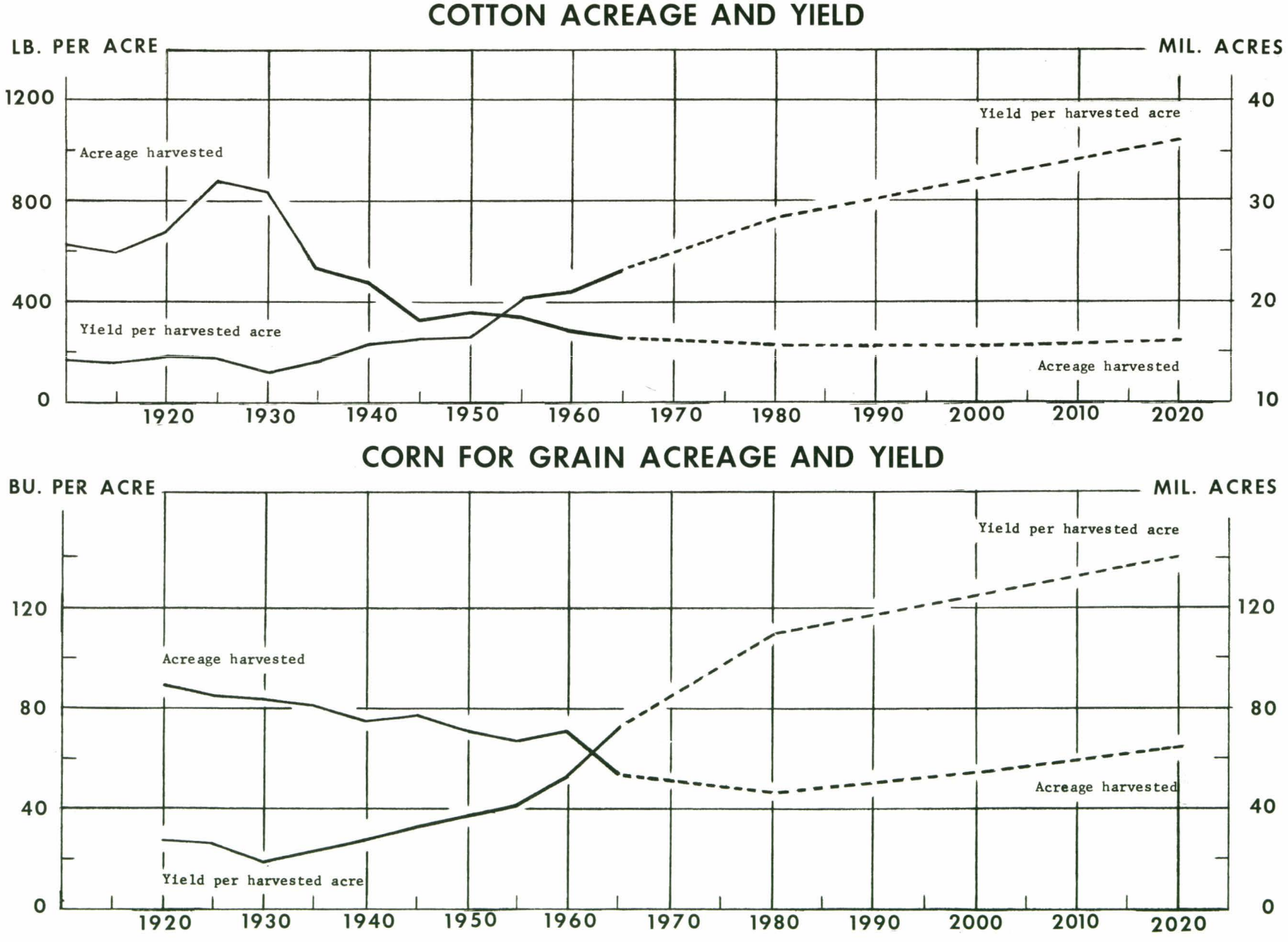

COTTON ACREAGE AND YIELD
LB. PER ACRE
MIL. ACRES
1200
800
400
0
40
30
20
10
Acreage harvested
Yield per harvested acre
Yield per harvested acre
Acreage harvested
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
CORN FOR GRAIN ACREAGE AND YIELD
BU. PER ACRE
MIL. ACRES
120
80
40
0
Acreage harvested
Yield per harvested acre
Yield per harvested acre
Acreage harvested
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020

Figure 3

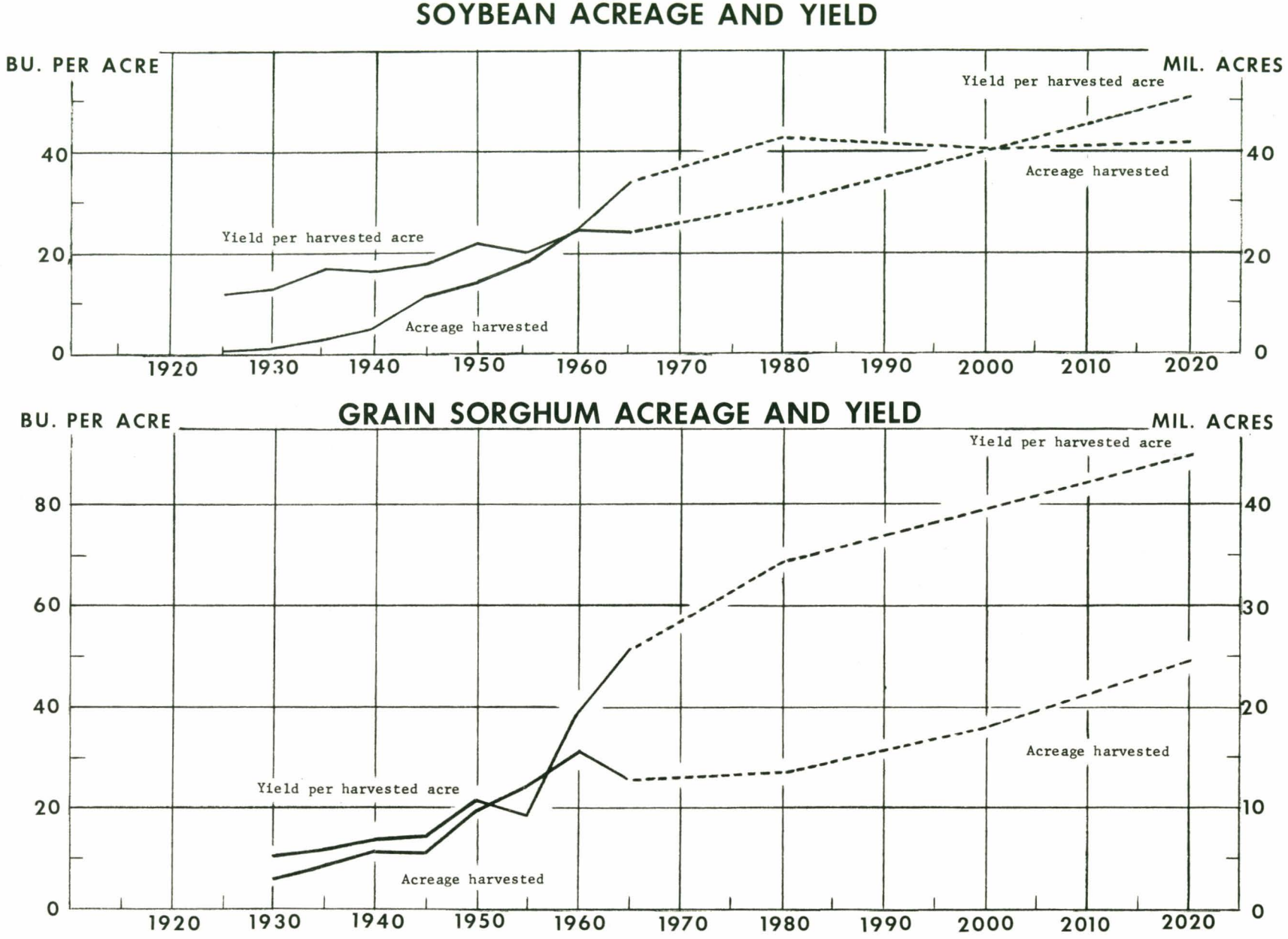
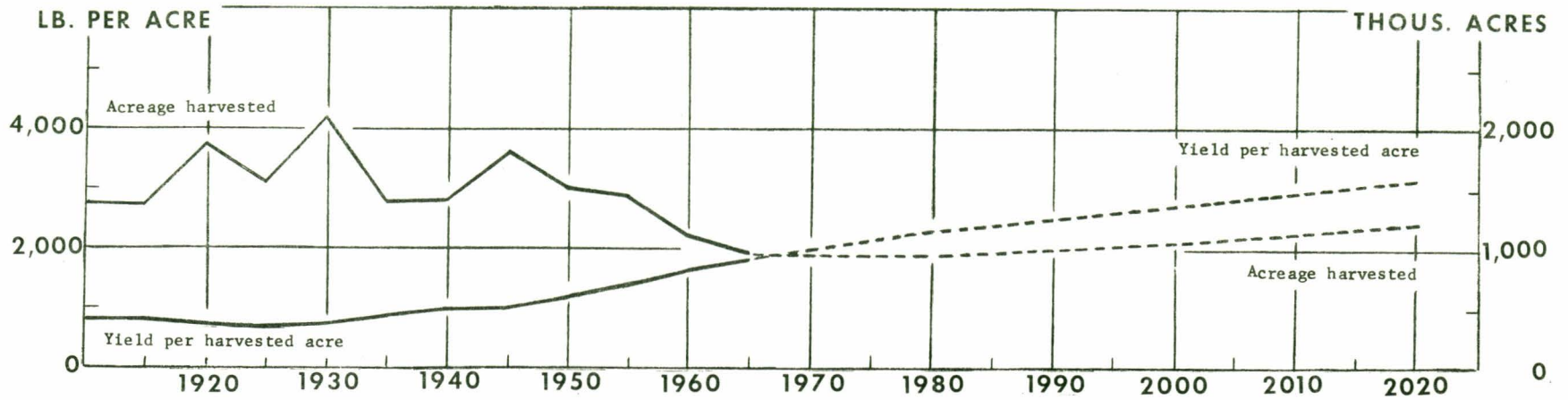

SOYBEAN ACREAGE AND YIELD
BU. PER ACRE
MIL. ACRES
Yield per harvested acre
Acreage harvested
0
20
40
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
GRAIN SORGHUM ACREAGE AND YIELD
BU. PER ACRE
MIL. ACRES
Yield per harvested acre
Acreage harvested
0
20
40
60
80
10
30

Figure 4

TOBACCO ACREAGE AND YIELD



PEANUTS ACREAGE AND YIELD

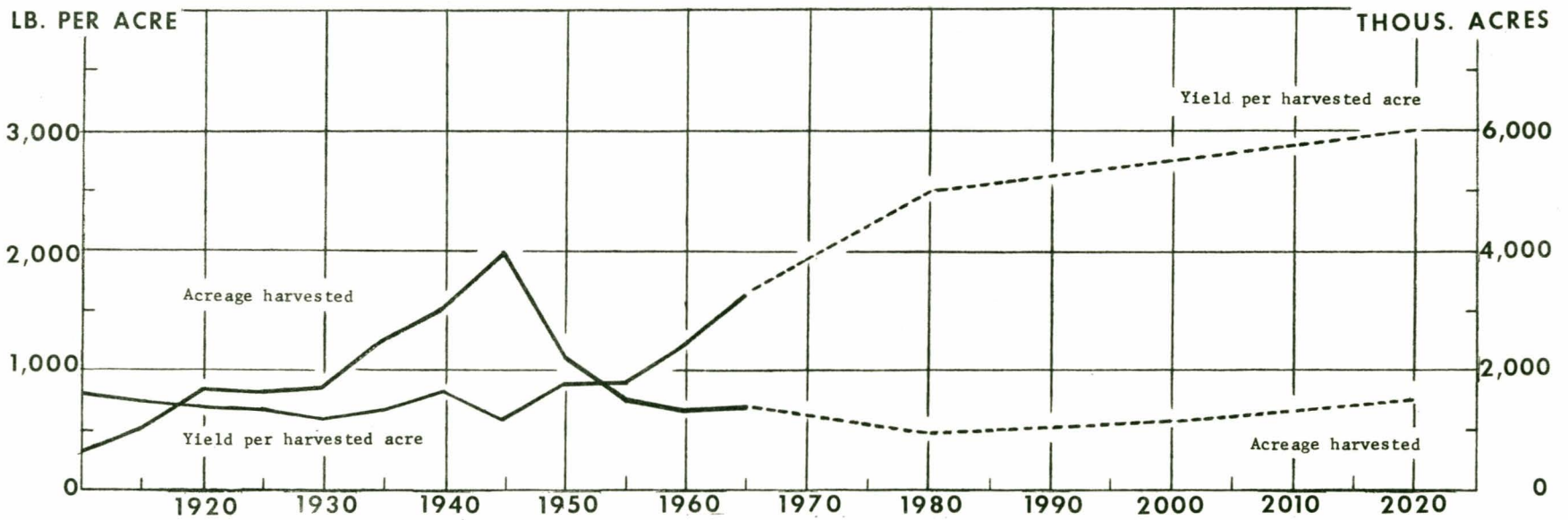
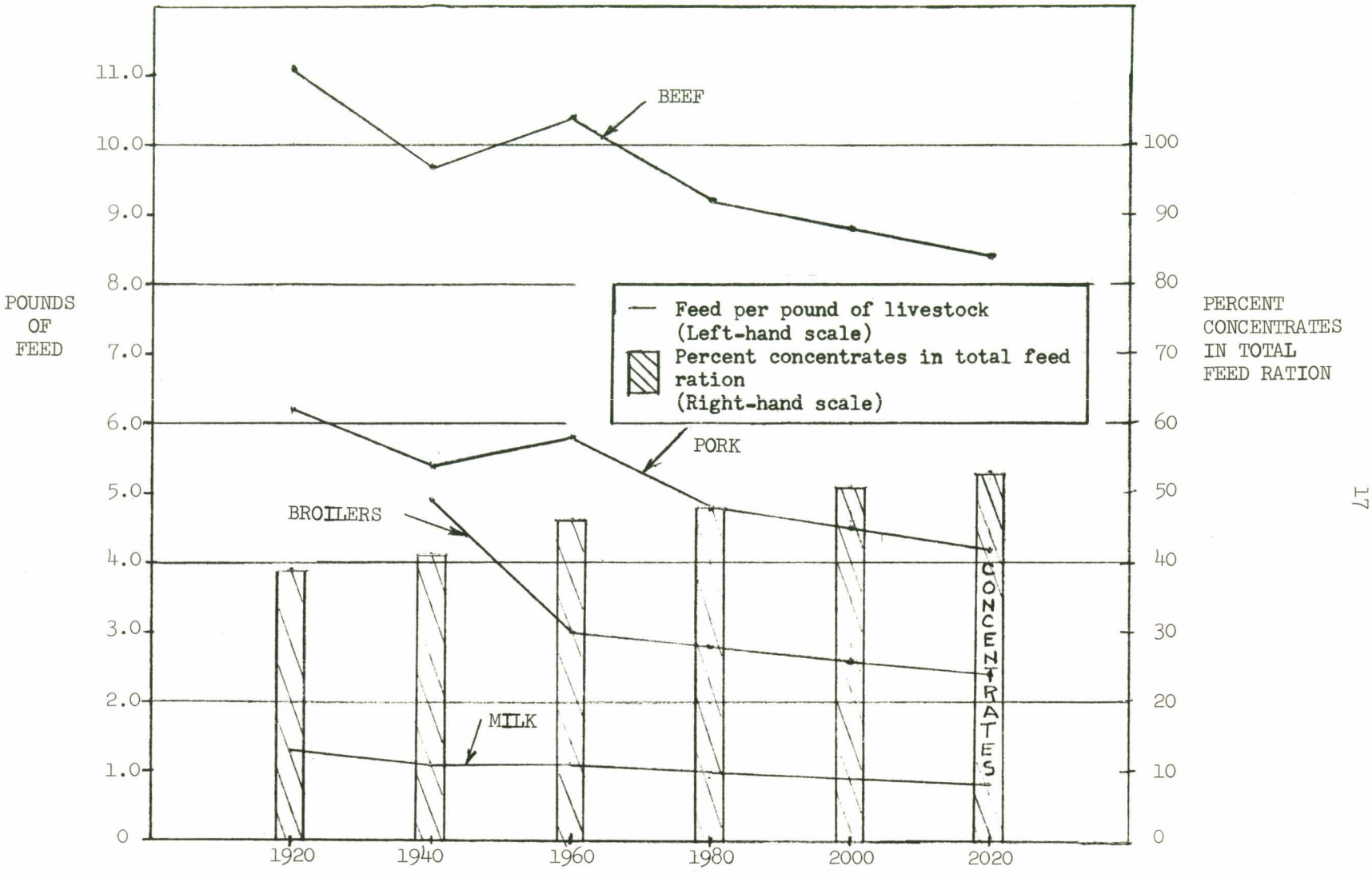


Figure 5

Table 6.--Acreages of major crops, United States, 1959 with projections to 1980, 2000 and 2020 1/

Land use 2/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	264,418	200,951	206,339	218,559
Grains	125,383	89,908	XXX	XXX
Roughage	139,035	111,043	XXX	XXX
Food crops	64,492	71,161	73,992	82,426
Grains	52,776	57,226	XXX	XXX
Vegetables, fruits and sugar	8,684	10,774	XXX	XXX
Other	3,032	3,161	XXX	XXX
Oil, fiber and miscellaneous crops	47,591	64,108	62,434	65,777
Oil	26,194	46,001	XXX	XXX
Cotton	14,644	11,450	XXX	XXX
Tobacco and miscellaneous	6,753	6,657	XXX	XXX
Total cropland harvested and used for pasture 3/	376,433	336,152	342,699	366,734

1/ Projections are preliminary.
2/ Commodities included in each group are as follows:
Feed grains: Corn, grain sorghum, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.
3/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.



POUNDS OF FEED (CORN EQUIVALENT) CONSUMED PER POUND OF LIVESTOCK PRODUCED, SELECTED TYPES OF LIVESTOCK; AND PERCENT OF CONCENTRATES IN THE FEED RATION, ALL LIVESTOCK, UNITED STATES

FIGURE 1.

Most of the increase in acreage used for the oil, fiber, and miscellaneous crop group is accounted for by the substantial increase in land used to produce oil crops. The 1980 production of these crops will use about 46 million acres, nearly 20 million more than in 1959. Acreages of the remaining crop groups show relatively little change as increased total production is nearly offset by increased yields per acre.

THE AGRICULTURAL RESOURCE BASE

The 1,902 million acre expanse of the United States consists of many different kinds of soil under diverse climatic conditions. Because of these different characteristics, the development and use of our land resources vary considerably between and within the Water Resource Regions of the United States.

While the total acreage of agricultural land fluctuated very little in the past 40 years, significant changes in major uses for agricultural purposes took place. Increased production from fewer cropland acres was made possible by increased use of fertilizer, other improved technology, and improvement of some lands by drainage, flood control and irrigation. Government supply control programs took land out of crop production. Thus, the acreage used for crop production decreased about 50 million acres in the past 15 years while total farm output increased by more than a third.

For purposes of this report the total land base was divided into five major categories-- cropland, pasture and range, forest and woodland, other agricultural land, and nonagricultural land. 1/ About 90 percent of the total land area of the United States was classified as agricultural in 1959 (Table 7). Urban and other built-up areas accounted for three percent and other special and miscellaneous uses accounted for the remaining seven percent.

Between 1950 and 1960, urban and other built-up areas absorbed an average of about one million acres of rural land each year. An additional million acres of rural land for water supply and flood control areas, national defense, wildlife refuges, etc., were taken annually. Thus, the areas of nonagricultural uses have increased about two million acres annually over the past decade.

The decline in the acreage of land available for agricultural purposes will continue during the projection period. By 2020 total agricultural land is projected to decline by about 100 million acres below the 1959 acreage. Even so, agricultural land will account for 1,624 million acres or about 85 percent of the total land area. Total cropland, including idle, fallow, and crop failure will account for about a fourth of the agricultural land throughout the projection period. However, the actual acreage in this category will decline steadily. The acreage of cropland harvested and used for pasture is a summation of the projected acreage of the major crops (Table 6).

Approximately 25 million acres of poor-quality land presently cropped, capability classes V through VIII, were not considered as potentially available cropland. This acreage was assumed to revert to pasture or range in the projection period. Land in forest and woodland cover will decline from about 37 percent of total agricultural land in 1959 to 34 percent in

---

1/ See the appendix for definitions of land included in each category.

Table 7.--Land utilization: United States, 1959 with preliminary projections to 1980, 2000 and 2020

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture	1/382,575	336,152	342,699	366,734
Cropland idle, fallow and crop failure	74,909	88,483	72,918	40,645
Total cropland	457,483	424,635	415,617	318,629
Pasture and range	630,131	649,270	642,351	649,517
Forest and woodland	637,253	622,912	605,209	567,130
Total agricultural 2/	1,724,867	1,696,817	1,663,177	1,624,027
Other land	176,889	204,939	238,579	277,729
Land area	1,901,756	1,901,756	1,901,756	1,901,756

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.
2/ Includes 32,634,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--41,955,000; 2000--44,501,000; and 2020--45,767,000.

2020. However, the projected area of commercial forest land is maintained without significant change (Table 8). This assumption reflects the expectation that possible gains in commercial forest area from the reversion of cropland and pasture will be offset by diversions to other uses such as residential areas, highways, reservoirs, and transmission lines. Further analysis of this assumption will be made as a part of the revised projections discussed in the Foreword.

In 1959, slightly more than 33.5 million acres of agricultural land was irrigated. 2/ This included cropland as well as pasture and range to which water was applied by artificial means. In each of the projection years, a level of irrigated acreage within the agricultural land category was assumed. This acreage was based on a continuation of private irrigation development generally in accord with recent trends plus the acreage in Federal projects now under construction or authorized for construction. After 1980, the assumed acreage of irrigated land does not include additional public development. These assumed irrigated land acreages provide a base from which the economic effects of additional public irrigation development may be considered and analyzed.

A concerted effort was made to achieve a balance between resource potentials and projected output, particularly for the 2020 major land use projections. It appears that the national agricultural resource base is adequate to support projected levels of output since the projected acreage of cropland harvested and used for pasture in 2020 is slightly less than was used in 1959. Even though the projected production in 2020 is more than double that of 1959-61, this increase is more than offset by the increase in projected agricultural productivity.

2/ Based upon the 1959 Census of Agriculture.

Table 8.--Commercial forest area, Water Resource Regions, 1962 with preliminary projections to 1980, 2000 and 2020

Water Resource Region	1962	Projections		
		1980	2000	2020
	1,000 acres			
North Atlantic	64,241			
South Atlantic-Gulf	107,175			
Ohio 1/	39,916			
Great Lakes	37,116			
Upper Mississippi	23,528			
Souris-Red	5,228			
Missouri	23,466			
Arkansas-White-Red	39,961			
Lower Mississippi	17,651			
Rio Grande	6,190			
Texas-Gulf	13,130			
Upper Colorado	9,566			
Lower Colorado	6,064			
Great Basin	2,146			
California	19,870			
Columbia-North Pacific	70,432			
Total	485,680			

The projections of industrial timber production shown in the following sections have been based on the assumption that the present area of commercial forest land will be maintained without significant change. This assumption--which reflects the expectation that possible gains in commercial forest area from the reversion of cropland and pasture will be offset by diversions to other uses such as residential areas, highways, reservoirs, and transmission lines--will be examined in detail in studies in each region.

1/ Excludes the Tennessee Water Resource Region.

WATER RESOURCE REGION PROJECTIONS

The projections of production, land use, and acreages of major crops by Water Resource Region, discussed briefly below and presented in tabular form in the appendix, are consistent with the projections for the United States presented in the earlier sections of this report. 3/ The regional production projections are based upon analysis of historical production patterns. These historical patterns were projected to 1980 with slight modifications in those regions where the data was limited. Very little change in the production patterns among regions was projected beyond 1980. Limitations in data were the primary reason for this approach. The potential for shifts in production among regions will be examined in greater detail in the revised projections.

Generally, the production of feed crops is projected to increase most in those areas that are now committed heavily to these crops. In the Southern and Central Regions and California production of these crops will be double the 1959-61 average by the year 2000, with further increases projected to 2020. 4/ Projected changes in food crop production show somewhat less variation among the regions than the feed crops. Production in all areas will double by the year 2020, with two regions tripling the 1959-61 average level by that year.

Oil and fiber crops are not generally grown in three regions. Elsewhere, most significant changes are projected for the Water Resource Regions in North Central part of the Nation--Missouri, Upper Mississippi, and the Ohio. In these regions, output of oil and fiber crops by 1980 is projected to approximately double, and by 2020 will be at least three times greater than the base period production.

Livestock production increases are projected to be quite general throughout the Nation with 1980 production in 13 of the 17 regions about 50 percent above the 1959-61 base period average. Production in these regions generally doubles the base period value by 2000 and in 2020 is about three times the 1959-61 average.

The total acreage of agricultural land is projected to decline in all regions. Losses of agricultural land to other uses will be most pronounced in those regions with largest population centers. In the North Atlantic,

---

3/ See Figure 7 for a map of the Water Resources Regions.

4/ See Appendix Tables 2-1 through 2-17, 5 and 6 for measures of production in each regions.

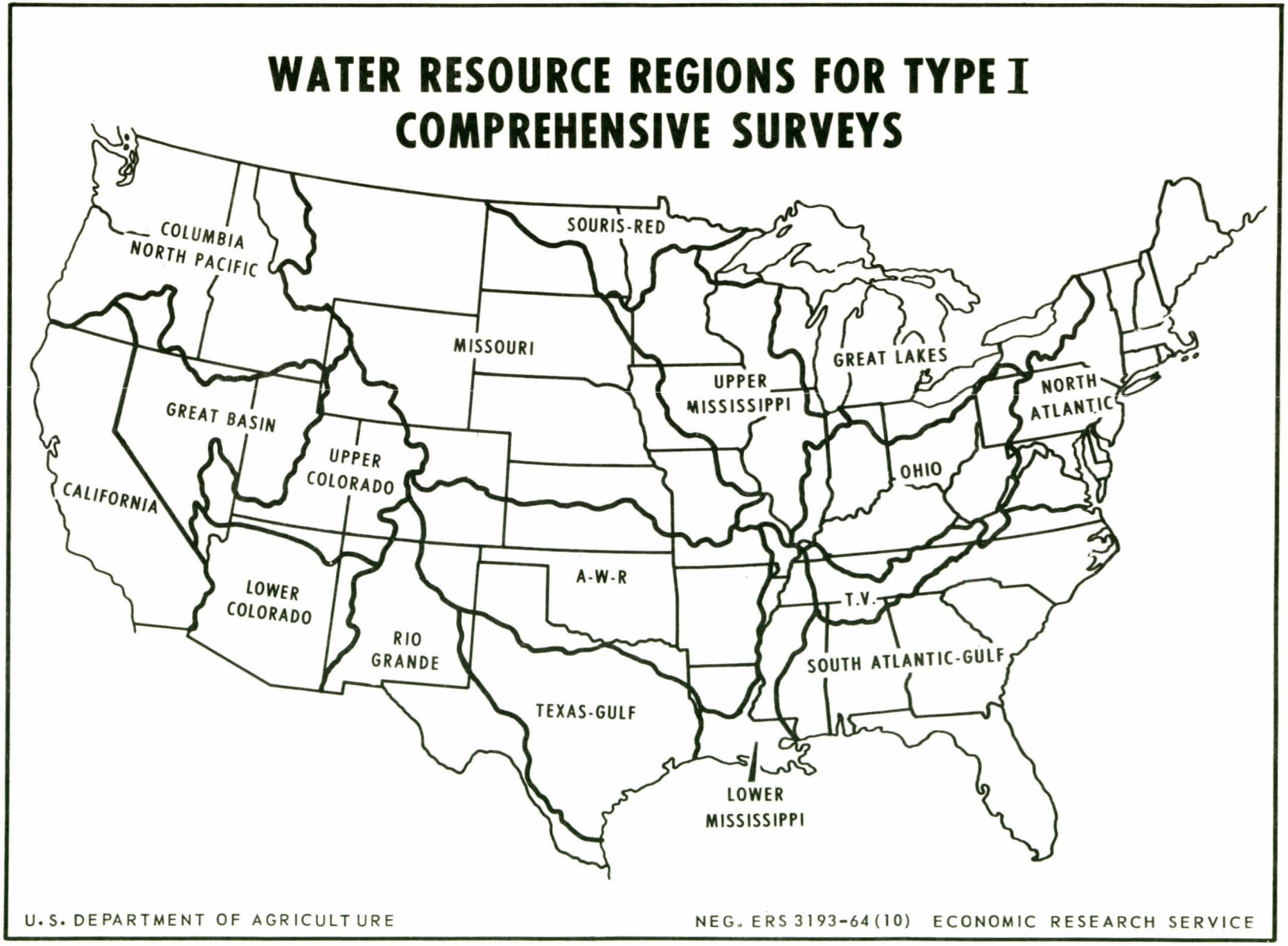

WATER RESOURCE REGIONS FOR TYPE I
COMPREHENSIVE SURVEYS
COLUMBIA
NORTH PACIFIC
SOURIS-RED
MISSOURI
GREAT LAKES
UPPER
MISSISSIPPI
NORTH
ATLANTIC
GREAT BASIN
UPPER
COLORADO
OHIO
CALIFORNIA
LOWER
COLORADO
A-W-R
T.V.
RIO
GRANDE
SOUTH ATLANTIC-GULF
TEXAS-GULF
LOWER
MISSISSIPPI
U.S. DEPARTMENT OF AGRICULTURE
NEG. ERS 3193-64(10) ECONOMIC RESEARCH SERVICE

Figure 7

Great Lakes, and California Regions, agricultural land by 2020 will be about a fifth less than the 1959 acreage. Losses in the South Atlantic and Ohio Regions will approximate a tenth of the 1959 base. Elsewhere reduction in agricultural land will be smaller. 5/

The acreage of cropland used to produce feed crops will decline between 1959 and 1980 in all but two regions. In these two-- Columbia-North Pacific and Lower Colorado--small increases are indicated. In 2020, the feed crop acreage will be less than the 1959 level in all but four regions: Texas Gulf, Lower Colorado, Great Basin, and Columbia-North Pacific.

In the projection period food crop production will generally require more acres in all but two regions: Rio Grande and Texas Gulf. Oil, fiber and miscellaneous crops will also require increased acres, particularly in those regions where soybeans are produced. 6/

5/ Appendix Tables 4-1 through 4-17 contain land utilization data for each of the Water Resource Regions.

6/ See Appendix Tables 3-1 through 3-17 for data on acreages of major crops in each Water Resource Region.

INCOME AND EMPLOYMENT

The economic activity in the agricultural sector of the economy can be viewed as a function of the quantities of agricultural commodities produced, and relative changes in the prices of inputs and outputs. For purposes of this preliminary report input prices were not analyzed. Two alternative levels of output prices were used--projected and normalized. Two overall measures of economic activity in the agricultural sector are provided--realized gross farm income and numbers of farm workers.

Projections of realized gross farm income shown in Table 9 are based upon projected production evaluated at normalized price levels. 7/ These data indicated that gross farm income in the United States in 1980 will be about 50 percent above the 1959-61 average. A further increase is indicated for 2000 when income is projected to be nearly twice the 1959-61 base value. In 2020, annual realized gross farm income will approximate one hundred billion dollars, slightly more than two and a half times the 1959-61 average value.

A second estimate of gross farm income was computed on the bases of an alternative set of prices. These were projected prices in terms of 1959-61 average dollars. The projected prices reflected some relative changes in output price levels. Generally, livestock prices were projected to increase relative to prices for crops. Using these prices, realized gross farm income for the United States showed movements very similar to those reflected by use of normalized prices. In 1980 and 2000 projected prices yielded total income only slightly below the level based on normalized series. However, in 2020 income computed from both series of prices are essentially equal. When realized gross farm income is computed for the Water Resource Regions using the two alternative sets of prices, the projected output price series yields income levels slightly below the normalized series in all but three regions--Lower Mississippi, Missouri, and Upper Colorado.

The number of workers required to produce the projected output presented in this report is projected to decline throughout the projection period. Changes in the structure of agriculture are inherent in these projections. Farms are expected to continue downward in numbers but grow in size as smaller farms are consolidated into larger commercial family farms. This will have the combined effect of reducing the number of farm workers as well as lengthening the average workweek of the employed as the partly-employed farmers move out of agriculture. The productivity of farm workers will continue to increase. Total farm output per unit of labor is projected to double between now and 1980 with lesser increases projected beyond that date. Productivity of employees engaged in lumber, wood products, and associated industries is assumed to increase between 2 and 2.5 percent per year.

7/ Normalized prices for Water Resource Regions were computed from data contained in "Interim Price Standards for Planning and Evaluating Water and Land Resources," Interdepartmental Staff Committee of the Water Resources Council, April 1966.

Table 9.--Realized gross farm income: 1959-61 average with preliminary projections to 1980, 2000 and 2020, United States and Water Resource Regions 1/

Water Resource Region	1959-61 average	Projections		
		1980	2000	2020
	Million dollars	Million dollars	Million dollars	Million dollars
North Atlantic	3,098	3,817	5,175	7,142
South Atlantic-Gulf	4,341	6,584	8,842	10,679
Ohio	2,967	4,490	5,988	8,147
Tennessee	587	945	1,266	1,724
Great Lakes	2,674	3,357	4,401	6,003
Upper Mississippi	6,557	9,271	12,537	16,003
Souris-Red	500	874	1,084	1,377
Missouri	5,358	8,054	10,816	14,741
Arkansas-White-Red	2,711	4,160	5,736	7,461
Lower Mississippi	1,402	2,077	2,680	3,545
Rio Grande	564	548	726	984
Texas-Gulf	1,842	2,852	3,621	4,870
Upper Colorado	123	186	249	358
Lower Colorado	454	829	1,094	1,477
Great Basin	211	328	443	605
California	3,330	5,018	6,695	9,316
Columbia-North Pacific	1,604	2,563	3,411	4,615
United States	38,323	55,951	74,767	99,076

1/ Projected income computed from normalized prices.

Table 10.--Income (payrolls) in the lumber and wood products industries, 1962, with preliminary projections to 1980, 2000 and 2020, Water Resource Regions 1/

Water Resource Region	1962	Projections		
		1980	2000	2020
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
North Atlantic	258,280	341,100	390,400	438,800
South Atlantic-Gulf	296,100	335,900	573,400	682,100
Ohio 2/	142,500	196,900	330,100	406,200
Great Lakes	177,830	246,000	277,300	308,100
Upper Mississippi	103,910	170,200	268,000	413,700
Souris-Red	2,260	4,000	7,900	11,700
Missouri	32,110	40,000	46,900	53,600
Arkansas-White-Red	112,280	137,000	187,100	239,700
Lower Mississippi	55,690	73,800	97,500	105,900
Rio Grande	4,080	10,100	15,700	16,100
Texas-Gulf	50,060	70,400	125,000	131,400
Upper Colorado	7,300	19,800	37,100	36,900
Lower Colorado	12,780	22,800	26,500	25,900
Great Basin	1,970	2,800	3,600	2,700
California	265,470	265,500	221,400	220,900
Columbia-North Pacific	685,550	870,300	844,800	837,100
United States	2,208,170	2,806,600	3,452,700	3,930,800

1/ Lumber and wood products industries include logging camps engaged in cutting timber, sawmills, veneer mills, lath mills, shingle mills, cooperage-stock mills, planing mills, and plywood mills engaged in producing lumber, veneer and plywood, and wood basic materials; and establishments engaged in manufacturing finished articles made entirely or mainly of wood (Major group 24, as defined in the Standard Industrial Classification Manual). Projections of payrolls were based on the employment figures shown in table 14, and the assumption that average wages and salaries per employee would increase at the same rate as productivity.

2/ Excludes the Tennessee Valley.

Table 11.--Income (payrolls) in the pulp, paper, and allied products industries, 1962, with preliminary projections to 1980, 2000 and 2020, Water Resource Regions 1/

Water Resource Region	1962	Projections		
		1980	2000	2020
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
North Atlantic	1,087,300	1,880,900	2,742,700	3,090,800
South Atlantic-Gulf	402,300	601,900	1,063,900	1,125,700
Ohio 2/	293,500	537,800	1,048,000	1,540,700
Great Lakes	745,060	1,174,600	1,689,800	1,882,500
Upper Mississippi	380,610	727,400	1,000,900	1,163,000
Souris-Red	8,740	10,500	16,400	16,500
Missouri	42,500	142,400	370,100	457,300
Arkansas-White-Red	79,700	177,900	311,500	340,400
Lower Mississipppi	75,090	240,700	449,900	445,000
Rio Grande	--	5,000	9,700	15,900
Texas-Gulf	64,970	159,000	284,100	278,800
Upper Colorado	--	12,000	24,300	37,100
Lower Colorado	4,010	9,000	17,800	29,100
Great Basin	--	--	--	--
California	172,660	663,800	1,048,400	1,113,100
Columbia-North Pacific	171,730	344,900	445,400	480,200
United States	3,528,170	6,687,800	10,522,900	12,026,100

1/ Pulp, paper and allied products industries include establishments manufacturing pulp primarily from wood and converting this pulp into paper or board; and the manufacture of paper and paperboard into converted products such as coated paper, paper bags, paperboard boxes, and envelopes (Major group 26, as defined in the Standard Industrial Classification Manual). Projections of payrolls were based on the employment figures shown in Table 15, and the assumption that average wages and salaries per employee would increase at the same rate as productivity.

2/ Excludes the Tennessee Valley.

Table 12.--Income (payrolls) in forest management,1962, with preliminary projections to 1980, 2000 and 2020, Water Resource Regions

Water Resource Region	1962	Projections		
		1980	2000	2020
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
North Atlantic	59,500	132,500	323,100	661,300
South Atlantic-Gulf	74,500	166,000	403,500	830,800
Ohio 2/	40,000	88,900	217,100	443,700
Great Lakes	21,000	46,700	113,700	232,300
Upper Mississippi	28,000	62,300	152,000	311,800
Souris-Red	4,500	10,100	24,300	50,200
Missouri	25,500	56,900	137,900	284,600
Arkansas-White-Red	23,000	51,400	125,100	255,300
Lower Mississippi	15,000	33,500	81,700	167,400
Rio Grande	3,500	7,800	19,200	39,800
Texas-Gulf	9,000	20,200	48,500	100,500
Upper Colorado	4,500	10,100	24,300	50,200
Lower Colorado	5,500	12,400	29,300	62,800
Great Basin	2,500	4,700	8,900	16,700
California	50,500	112,200	273,300	563,000
Columbia-North Pacific	87,500	194,900	475,000	975,300
United States	454,000	1,010,600	2,456,900	5,045,700

1/ Forest management includes protection and management of forests for the production of timber and related products.
2/ Excludes the Tennessee Valley.

Projections of labor requirements are related to projected production levels. Productivity per man hour applied to projected production by major commodity groups yields projected total man hours of labor. These were converted to numbers of workers by projecting the average hours worked per year per man.

The projected number of farm workers shown in (Table 13) is based upon the USDA series of numbers of farm workers. These are estimates of the annual average numbers of family and hired workers engaged in agricultural production. The individuals may, and in fact many do hold jobs in other industries.

The combined impact of the projections contained in this report upon agriculturally-related industries--those industries that serve and are served by agriculture--is difficult to evaluate. Existing data are inadequate to explore fully the interindustry relationships between agriculture and other sectors of the economy. These relationships will be analyzed in more detail in the revised projections. However, some of the existing data at the national level are of interest.

In 1958 the livestock and livestock products sector of United States agriculture acquired about one-fourth of the value of its inputs from other agricultural products sectors. Much of this input was in the form of purchases of feed crops directly from other farmers. About a tenth of the inputs to the livestock products sector came from the food and kindred products industries. Purchases from these industries were largely feed concentrates of various types. In the same year about three-fifths of the total value of output from the livestock and livestock products sector was used as inputs by the food and kindred products sector.

In 1980, the relative value of purchases from the food and kindred products sectors by livestock producers may increase by as much as one-fifth as uses of high protein feeds increases.

The other agricultural products sectors, primarily crop production, obtain inputs from more diverse sources than the livestock and livestock products sectors. About four percent of the value of inputs to the crop production sectors in 1958 represented purchases of such agricultural services as cotton ginning and contract harvesting of various types. Nearly five percent of requirements for crop production included purchases from the chemical industries--largely commercial fertilizers. Such purchases are expected to increase faster than the value of gross output in the future, thus by 1980 nearly a tenth of the value of crop production inputs may be represented by purchases from the chemical industries.

Another relatively important supplier of inputs to the other agricultural products sector is petroleum and related products industries that supply gasoline and oil. In 1958, purchases from these industries represented about four percent of the value of direct requirements of the crop producers.

Table 13.--Number of farm workers, 1959-61 average with preliminary projections to 1980, 2000 and 2020, United States and Water Resource Regions 1/

Water Resource Region	1959-61	Projections		
		1980	2000	2020
	1,000 Persons	1,000 Persons	1,000 Persons	1,000 Persons
North Atlantic	576	258	239	192
South-Atlantic-Gulf	1,113	475	439	351
Ohio	817	398	368	295
Tennessee Valley	231	115	106	85
Great Lakes	535	287	265	213
Upper Mississippi	852	453	418	336
Souris-Red	94	57	53	43
Missouri	717	413	381	306
Arkansas-White-Red	482	298	275	221
Lower Mississippi	462	258	239	192
Rio Grande	78	32	30	24
Texas-Gulf	361	208	192	154
Upper Colorado	26	18	17	13
Lower Colorado	50	25	23	19
Great Basin	41	22	20	16
California	374	151	139	112
Columbia-North Pacific	297	122	113	91
United States	7,106	3,590	3,317	2,663

1/ Average annual number of farm workers, family and hired.

Table 14.--Employment in the lumber and wood products industries, 1962, with preliminary projections to 1980, 2000 and 2020, Water Resource Regions 1/

Water Resource Region	1962	Projections		
		1980	2000	2020
	Number	Number	Number	Number
North Atlantic	70,690	65,400	50,300	38,100
South Atlantic-Gulf	111,050	88,200	101,300	81,150
Ohio 2/	39,560	38,300	43,200	35,800
Great Lakes	43,350	42,000	31,800	23,800
Upper Mississippi	19,810	22,700	24,100	25,200
Souris-Red	750	900	1,200	1,200
Missouri	8,820	7,600	6,100	4,700
Arkansas-White-Red	34,750	29,700	27,300	23,560
Lower Mississippi	19,270	17,900	15,900	11,600
Rio Grande	1,110	2,000	2,000	1,400
Texas-Gulf	15,910	15,700	18,700	13,200
Upper Colorado	1,950	3,700	4,700	3,100
Lower Colorado	2,860	3,700	2,900	1,900
Great Basin	400	400	400	200
California	48,610	34,000	19,100	12,800
Columbia-North Pacific	125,420	109,600	89,700	78,500
United States	544,310	481,800	438,700	356,210

1/ Lumber and wood products industries include logging camps engaged in cutting timber, sawmills, veneer mills, lath mills, shingle mills, cooperage-stock mills, planing mills, and plywood mills engaged in producing lumber, veneer and plywood, and wood basic materials; and establishments engaged in manufacturing finished articles made entirely or mainly of wood (Major group 24 as defined in the Standard Industrial Classification Manual). Projections of employment were based on the timber input figures shown in Appendix table 5, and the assumption that productivity, i.e., the volume of wood processed by each employee, would continue to increase at historical rates. Implicit in this rate is an allowance for an increase in secondary manufacturing activities such as the further manufacture of lumber into millwork, flooring, and prefabricated buildings.

2/ Excludes the Tennessee Valley.

Table 15.--Employment in the pulp, paper, and allied products industries, 1962, with preliminary projections to 1980, 2000 and 2020, Water Resource Regions 1/

Water Resource Region	1962	Projections		
		1980	2000	2020
	Number	Number	Number	Number
North Atlantic	192,580	213,500	190,000	130,700
South Atlantic-Gulf	69,900	67,100	72,400	46,700
Ohio 2/	49,350	58,000	69,000	61,900
Great Lakes	128,460	129,800	114,000	77,500
Upper Mississippi	43,520	53,300	44,800	31,800
Souris-Red	2,140	1,600	1,500	1,000
Missouri	8,140	17,700	27,500	20,900
Arkansas-White-Red	13,870	19,800	21,200	14,100
Lower Mississippi	12,980	26,700	30,400	18,800
Rio Grande	--	500	600	600
Texas-Gulf	11,920	18,700	20,400	12,200
Upper Colorado	--	1,200	1,500	1,400
Lower Colorado	620	900	1,100	1,100
Great Basin	--	--	--	--
California	28,270	69,700	67,200	43,500
Columbia-North Pacific	27,100	36,400	36,100	36,100
United States	588,850	714,900	697,700	498,300

1/ Pulp, paper and allied products industries include establishments manufacturing pulp primarily from wood and converting this pulp into paper or board; and the manufacture of paper and paperboard into converted products such as coated paper, paper bags, paperboard boxes, and envelopes (Major group 26, as defined in the Standard Industrial Classification Manual). Projections of employment were based on the pulpwood input figures shown in Appendix table 6, and the assumption that productivity, i.e., the volume of wood processed by each employee, would continue to increase at historical rates. Implicit in this rate is an allowance for an increase in secondary manufacturing activities such as the further manufacture of paper and board into bags, boxes, and other similar products.

2/ Excludes the Tennessee Valley.

Table 16.--Employment in forest management, 1962, with preliminary projections to 1980, 2000 and 2020, Water Resource Regions 1/

Water Resource Region	1962	Projections		
		1980	2000	2020
	Number	Number	Number	Number
North Atlantic	11,900	17,000	25,300	31,600
South Atlantic-Gulf	14,900	21,300	31,600	39,700
Ohio 2/	8,000	11,400	17,000	21,200
Great Lakes	4,200	6,000	8,900	11,100
Upper Mississippi	5,600	8,000	11,900	14,900
Souris-Red	900	1,000	1,100	1,200
Missouri	5,100	7,300	10,800	13,600
Arkansas-White-Red	4,600	6,500	9,800	12,200
Lower Mississippi	3,000	4,300	6,400	8,000
Rio Grande	700	1,000	1,500	1,900
Texas-Gulf	1,800	2,600	3,800	4,800
Upper Colorado	900	1,300	1,900	2,400
Lower Colorado	1,100	1,600	2,300	3,000
Great Basin	500	600	700	800
California	10,100	14,400	21,400	26,900
Columbia-North Pacific	17,500	25,000	37,200	46,600
United States	90,800	129,300	191,600	239,000

1/ Forest management includes protection and management of forests for the production of timber and related products.
2/ Excludes the Tennessee Valley.

By 1980, use of petroleum products per unit of crop input is projected to decline from current levels. This will occur as tractor sizes increases, as self-propelled units increase in number, and as more intensive use is made of tractors and machinery on larger size farms.

The primary users of the output from the other agricultural products sector are: livestock and livestock products, food and kindred products, tobacco manufactureres, and the textile industries. In 1958, these sectors purchased nearly three-fourths of the total value of output from the other agricultural products sectors.

A P P E N D I X

Appendix Table 1.--Production of Agricultural Commodities: United States, 1959-61 average, with projections to 1980, 2000, and 2020 1/

Commodity	Unit	1959-61	Projections		
			1980	2000	2020
		Thousands			
Feed grains (corn equiv.)	Tons	145,128	199,683	259,571	339,956
Corn	"	106,010	146,640	193,813	258,222
Oats	"	17,167	18,471	17,176	12,662
Barley	"	9,995	12,624	12,866	12,035
Sorghum	"	15,445	26,377	40,759	62,640
Food Crops:					
Wheat	Bu.	1,237,700	1,889,600	2,192,200	2,618,600
Rye	"	27,868	40,732	53,893	72,518
Rice (rough)	Cwt.	54,145	84,130	96,470	113,850
Peanuts (farm stock)	Lbs.	1,705,500	2,519,000	3,455,000	4,774,000
Sugar (raw)	Tons	3,290	7,619	12,497	19,357
Dry beans	Cwt.	19,048	23,450	30,980	41,580
Dry peas	Cwt.	3,927	5,300	6,100	7,220
Potatoes	Cwt.	265,609	328,876	450,136	627,396
Sweet Potatoes	Cwt.	16,508	18,052	24,882	34,492
Fruits and Vegetables:					
Citrus Fruits	Tons	8,028	11,479	15,446	21,026
Noncitrus Fruits	Tons	9,952	13,123	18,887	26,995
Vegetables	Cwt.	403,902	642,235	881,055	1,217,135
Tree nuts (shelled)	Lbs.	170,000	154,000	303,000	513,000
Fiber and Misc. Crops:					
Cotton	Lbs.	7,191,300	8,429,000	10,335,000	13,016,000
Flaxseed	Bu.	24,605	22,518	29,161	38,500
Soybeans	Bu.	589,257	1,305,467	1,640,933	2,116,367
Tobacco	Lbs.	1,934,200	2,225,000	2,932,000	3,926,000
Livestock and products:					
Beef and veal	Lbs.	28,898,500	47,451,000	66,580,000	93,537,000
Pork	Lbs.	20,220,400	27,056,000	37,352,000	51,830,000
Lamb & mutton	Lbs.	1,683,000	1,700,000	2,378,000	3,331,000
Farm chickens	Lbs.	1,251,700	1,456,000	2,005,000	2,779,000
Turkeys	Lbs.	1,600,900	3,559,000	4,888,000	6,760,000
Eggs	No.	62,302,000	75,528,000	104,065,000	144,289,000
Milk	Lbs.	123,460,700	145,089,000	198,719,000	274,269,000
Broilers	Lbs.	6,207,100	10,702,000	14,608,000	20,111,000

1/ Exclude Alaska and Hawaii

Appendix Table 2-1.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, North Atlantic Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	113	126	137
Feed grains	115	XXX	XXX
Hay and forage	111	XXX	XXX
Food crops	133	182	253
Food grains	104	XXX	XXX
Vegetables, fruits, sugar	144	XXX	XXX
Other food crops	122	XXX	XXX
Oil and fiber crops	139	180	236
Oil crops	184	XXX	XXX
Cotton	---	XXX	XXX
Tobacco	102	XXX	XXX
Livestock and products	120	165	228
Meat animals	126	XXX	XXX
Milk	124	XXX	XXX
Poultry products	177	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61= 100.

2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay silage, straw stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-2.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, South Atlantic Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	158	204	280
Feed grains	132	XXX	XXX
Hay and forage	243	XXX	XXX
Food crops	151	208	288
Food grains	99	XXX	XXX
Vegetables, fruits, sugar	161	XXX	XXX
Other food crops	81	XXX	XXX
Oil and fiber crops	130	168	223
Oil crops	200	XXX	XXX
Cotton	125	XXX	XXX
Tobacco	115	XXX	XXX
Livestock and products	165	228	316
Meat animals	177	XXX	XXX
Milk	116	XXX	XXX
Poultry products	188	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay silage, straw stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-3.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Ohio Basin Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	141	180	231
Feed grains	145	XXX	XXX
Hay and forage	128	XXX	XXX
Food crops	165	193	226
Food grains	166	XXX	XXX
Vegetables, fruits, sugar	148	XXX	XXX
Other food crops	123	XXX	XXX
Oil and fiber crops	173	222	291
Oil crops	235	XXX	XXX
Cotton	---	XXX	XXX
Tobacco	123	XXX	XXX
Livestock and products	131	181	252
Meat animals	139	XXX	XXX
Milk	119	XXX	XXX
Poultry products	116	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay silage, straw stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-4.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Tennessee Valley Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	146	191	244
Feed grains	140	XXX	XXX
Hay and forage	156	XXX	XXX
Food crops	132	174	234
Food grains	153	XXX	XXX
Vegetables, fruits, sugar	152	XXX	XXX
Other food crops	66	XXX	XXX
Oil and fiber crops	121	154	200
Oil crops	618	XXX	XXX
Cotton	125	XXX	XXX
Tobacco	102	XXX	XXX
Livestock and products	162	224	311
Meat animals	176	XXX	XXX
Milk	110	XXX	XXX
Poultry products	177	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.

2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay silage, straw stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-5.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Great Lakes Water Resource Region

Commodity groups 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	131	156	198
Feed grains	123	XXX	XXX
Hay and forage	174	XXX	XXX
Food crops	139	186	252
Food grains	129	XXX	XXX
Vegetables, fruits, sugar	148	XXX	XXX
Other food crops	129	XXX	XXX
Oil and fiber crops	214	269	348
Oil crops	214	XXX	XXX
Cotton	---	XXX	XXX
Tobacco	---	XXX	XXX
Livestock and products	125	173	240
Meat animals	149	XXX	XXX
Milk	115	XXX	XXX
Poultry products	112	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay silage, straw stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-6.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Upper Mississippi Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	154	205	275
Feed grains	146	XXX	XXX
Hay and forage	179	XXX	XXX
Food crops	116	150	198
Food grains	101	XXX	XXX
Vegetables, fruits, sugar	138	XXX	XXX
Other food crops	105	XXX	XXX
Oil and fiber crops	195	246	317
Oil crops	198	XXX	XXX
Cotton	---	XXX	XXX
Tobacco	82	XXX	XXX
Livestock and products	142	196	273
Meat animals	153	XXX	XXX
Milk	123	XXX	XXX
Poultry products	121	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay silage, straw stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-7.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Souris-Red-Rainy Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	121	130	132
Feed grains	132	XXX	XXX
Hay and forage	99	XXX	XXX
Food crops	197	240	299
Food grains	212	XXX	XXX
Vegetables, fruits, sugar	251	XXX	XXX
Other food crops	118	XXX	XXX
Oil and fiber crops	216	267	356
Oil crops	216	XXX	XXX
Cotton	---	XXX	XXX
Tobacco	---	XXX	XXX
Livestock and products	111	153	214
Meat animals	106	XXX	XXX
Milk	110	XXX	XXX
Poultry products	136	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay silage, straw stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-8.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Missouri Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	139	179	235
Feed grains	147	XXX	XXX
Hay and forage	120	XXX	XXX
Food crops	158	192	240
Food grains	157	XXX	XXX
Vegetables, fruits, sugar	191	XXX	XXX
Other food crops	109	XXX	XXX
Oil and fiber crops	207	261	338
Oil crops	210	XXX	XXX
Cotton	---	XXX	XXX
Tobacco	84	XXX	XXX
Livestock and products	142	198	272
Meat animals	151	XXX	XXX
Milk	102	XXX	XXX
Poultry products	97	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61= 100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay silage, straw stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-9.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Arkansas-White-Red Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	140	233	269
Feed grains	140	XXX	XXX
Hay and forage	140	XXX	XXX
Food crops	140	165	201
Food grains	140	XXX	XXX
Vegetables, fruits, sugar	148	XXX	XXX
Other food crops	89	XXX	XXX
Oil and fiber crops	125	156	199
Oil crops	168	XXX	XXX
Cotton	109	XXX	XXX
Tobacco	---	XXX	XXX
Livestock and products	153	212	296
Meat animals	155	XXX	XXX
Milk	97	XXX	XXX
Poultry products	205	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay silage straw, stover, pulp.
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-10.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Lower Mississippi Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	95	124	161
Feed grains	75	XXX	XXX
Hay and forage	164	XXX	XXX
Food crops	164	224	309
Food grains	149	XXX	XXX
Vegetables, fruits, sugar	193	XXX	XXX
Other food crops	106	XXX	XXX
Oil and fiber crops	142	175	223
Oil crops	230	XXX	XXX
Cotton	110	XXX	XXX
Tobacco	127	XXX	XXX
Livestock and products	149	207	288
Meat animals	160	XXX	XXX
Milk	95	XXX	XXX
Poultry products	186	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay, silage straw, stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-11.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Rio Grande Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	148	200	275
Feed grains	158	XXX	XXX
Hay and forage	143	XXX	XXX
Food crops	121	166	229
Food grains	---	XXX	XXX
Vegetables, fruits, sugar	122	XXX	XXX
Other food crops	111	XXX	XXX
Oil and fiber crops	113	138	174
Oil crops	---	XXX	XXX
Cotton	113	XXX	XXX
Tobacco	---	XXX	XXX
Livestock and products	139	194	272
Meat animals	147	XXX	XXX
Milk	73	XXX	XXX
Poultry products	190	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay, silage straw, stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-12.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Texas Gulf Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	146	205	305
Feed grains	122	XXX	XXX
Hay and forage	279	XXX	XXX
Food crops	142	173	217
Food grains	144	XXX	XXX
Vegetables, fruits, sugar	145	XXX	XXX
Other food crops	91	XXX	XXX
Oil and fiber crops	107	132	167
Oil crops	118	XXX	XXX
Cotton	106	XXX	XXX
Tobacco	---	XXX	XXX
Livestock and products	147	205	286
Meat animals	152	XXX	XXX
Milk	94	XXX	XXX
Poultry products	186	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay, silage straw, stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-13.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Upper Colorado Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	85	105	125
Feed grains	125	XXX	XXX
Hay and forage	78	XXX	XXX
Food crops	151	206	285
Food grains	161	XXX	XXX
Vegetables, fruits, sugar	153	XXX	XXX
Other food crops	131	XXX	XXX
Oil and fiber crops	---	---	---
Oil crops	---	XXX	XXX
Cotton	---	XXX	XXX
Tobacco	---	XXX	XXX
Livestock and products	137	210	295
Meat animals	150	XXX	XXX
Milk	102	XXX	XXX
Poultry products	69	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay, silage straw, stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-14.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Lower Colorado Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	149	191	235
Feed grains	137	XXX	XXX
Hay and forage	155	XXX	XXX
Food crops	155	210	288
Food grains	143	XXX	XXX
Vegetables, fruits, sugar	158	XXX	XXX
Other food crops	129	XXX	XXX
Oil and fiber crops	155	190	239
Oil crops	19	XXX	XXX
Cotton	155	XXX	XXX
Tobacco	---	XXX	XXX
Livestock and products	178	250	350
Meat animals	190	XXX	XXX
Milk	131	XXX	XXX
Poultry products	144	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay, silage straw, stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-15.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Great Basin Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	109	135	161
Feed grains	130	XXX	XXX
Hay and forage	105	XXX	XXX
Food crops	134	182	252
Food grains	137	XXX	XXX
Vegetables, fruits, sugar	137	XXX	XXX
Other food crops	92	XXX	XXX
Oil and fiber crops	---	---	---
Oil crops	---	XXX	XXX
Cotton	---	XXX	XXX
Tobacco	---	XXX	XXX
Livestock and products	155	216	302
Meat animals	164	XXX	XXX
Milk	130	XXX	XXX
Poultry products	160	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay, silage straw, stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-16.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, California Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	169	211	257
Feed grains	132	XXX	XXX
Hay and forage	194	XXX	XXX
Food crops	147	204	285
Food grains	156	XXX	XXX
Vegetables, fruits, sugar	149	XXX	XXX
Other food crops	115	XXX	XXX
Oil and fiber crops	133	163	205
Oil crops	19	XXX	XXX
Cotton	134	XXX	XXX
Tobacco	---	XXX	XXX
Livestock and products	168	234	326
Meat animals	176	XXX	XXX
Milk	131	XXX	XXX
Poultry products	191	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay, silage straw, stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and noncitrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 2-17.--Preliminary projections of production of major agricultural product groups, 1980, 2000 and 2020, Columbia-North Pacific Water Resource Region

Commodity group 2/	Projections 1/		
	1980	2000	2020
	Index	Index	Index
Feed crops	135	159	186
Feed grains	120	XXX	XXX
Hay and forage	144	XXX	XXX
Food crops	164	216	289
Food grains	180	XXX	XXX
Vegetables, fruits, sugar	163	XXX	XXX
Other food crops	145	XXX	XXX
Oil and fiber crops	---	---	---
Oil crops	---	XXX	XXX
Cotton	---	XXX	XXX
Tobacco	---	XXX	XXX
Livestock and products	146	203	281
Meat animals	164	XXX	XXX
Milk	122	XXX	XXX
Poultry products	140	XXX	XXX

1/ Projections are indexes of physical volume, 1959-61=100.
2/ Items included in each commodity group are as follows:
Feed grains: Corn, oats, barley, sorghum grain;
Hay and forage: Hay, silage straw, stover, pulp;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables, citrus and non-citrus fruits, nuts, sugar cane, sugar beets;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed;
Meat animals: Beef, veal, pork, lamb, mutton, and;
Poultry products: Farm chickens, turkeys, eggs, broilers.

Appendix Table 3-1.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, North Atlantic Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	12,696	8,536	8,446	8,907
Grains	2,968	2,410	XXX	XXX
Roughage	9,728	6,126	XXX	XXX
Food crops	1,987	2,016	2,121	2,428
Grains	897	680	XXX	XXX
Vegetables, fruits, sugar	753	1,015	XXX	XXX
Other food crops	337	321	XXX	XXX
Oil, fiber & misc. crops	694	1,405	1,377	1,491
Oil	632	1,329	XXX	XXX
Cotton	2	--	XXX	XXX
Tobacco & miscellaneous	60	76	XXX	XXX
Total cropland harvested and used for pasture 2/	15,377	11,957	11,944	12,826

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets and sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-2.--Acreage of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, South Atlantic Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	15,304	9,532	11,509	11,518
Grains	7,685	3,820	XXX	XXX
Roughage	7,619	5,712	XXX	XXX
Food crops	2,703	2,687	3,004	2,995
Grains	794	515	XXX	XXX
Vegetables, fruits, sugar	1,777	2,101	XXX	XXX
Other food crops	132	71	XXX	XXX
Oil, fiber & misc. crops	6,249	7,097	7,228	7,915
Oil	2,002	3,419	XXX	XXX
Cotton	2,392	1,904	XXX	XXX
Tobacco & miscellaneous	1,855	1,774	XXX	XXX
Total cropland harvested and used for pasture 2/	24,256	19,316	19,451	22,428

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage , cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-3.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Ohio Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	27,626	19,244	18,922	20,163
Grains	11,692	8,044	XXX	XXX
Roughage	15,934	11,200	XXX	XXX
Food crops	2,771	2,935	2,805	2,950
Grains	2,517	2,739	XXX	XXX
Vegetables, fruits, sugar	221	159	XXX	XXX
Other food crops	33	37	XXX	XXX
Oil, fiber & misc. crops	4,380	8,144	7,440	7,641
Oil	3,683	7,489	XXX	XXX
Cotton	3	--	XXX	XXX
Tobacco & miscellaneous	694	655	XXX	XXX
Total cropland harvested and used for pasture 2/	34,777	30,323	29,167	30,754

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats and barley;
Roughages: Hay, silage, forage cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-4.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Tennessee Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	4,666	3,699	3,911	4,243
Grains	1,359	871	XXX	XXX
Roughage	3,307	2,828	XXX	XXX
Food crops	203	216	224	246
Grains	135	136	XXX	XXX
Vegetables, fruits, sugar	53	69	XXX	XXX
Other food crops	15	11	XXX	XXX
Oil, fiber & misc. crops	549	662	630	664
Oil	44	238	XXX	XXX
Cotton	365	279	XXX	XXX
Tobacco & miscellaneous	140	145	XXX	XXX
Total cropland harvested and used for pasture 2/	5,418	4,577	4,765	5,153

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits , sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, and sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-5.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Great Lakes Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	17,796	14,689	14,436	12,100
Grains	7,890	6,027	XXX	XXX
Roughage	9,906	8,662	XXX	XXX
Food crops	3,735	3,980	4,186	4,652
Grains	2,168	2,152	XXX	XXX
Vegetables, fruits, sugar	885	982	XXX	XXX
Other food crops	682	846	XXX	XXX
Oil, fiber & misc. crops	2,024	4,475	4,202	4,303
Oil	1,684	4,135	XXX	XXX
Cotton	--	--	XXX	XXX
Tobacco & miscellaneous	340	340	XXX	XXX
Total cropland harvested and used for pasture 2/	23,555	23,144	22,824	21,055

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-6.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Lower Mississippi Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	5,755	3,912	3,744	2,646
Grains	1,974	957	XXX	XXX
Roughage	3,781	2,955	XXX	XXX
Food crops	1,194	1,381	1,643	2,012
Grains	766	807	XXX	XXX
Vegetables, fruits, sugar	358	519	XXX	XXX
Other food crops	70	55	XXX	XXX
Oil, fiber & misc. crops	6,198	8,806	8,360	8,717
Oil	3,234	6,798	XXX	XXX
Cotton	2,935	1,972	XXX	XXX
Tobacco & miscellaneous	29	36	XXX	XXX
Total cropland harvested and used for pasture 2/	13,147	14,099	13,747	13,375

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-7.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Souris-Red Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	9,055	5,913	5,663	5,298
Grains	5,820	3,943	XXX	XXX
Roughage	3,235	1,970	XXX	XXX
Food crops	4,149	5,924	6,389	7,327
Grains	3,977	5,529	XXX	XXX
Vegetables, fruits, sugar	3	158	XXX	XXX
Other food crops	169	237	XXX	XXX
Oil, fiber & misc. crops	1,778	2,382	2,455	2,837
Oil	1,478	2,082	XXX	XXX
Cotton	--	--	XXX	XXX
Tobacco & miscellaneous	300	300	XXX	XXX
Total cropland harvested and used for pasture 2/	14,982	14,219	14,507	15,462

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-8.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Missouri Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	63,046	44,529	46,083	54,589
Grains	31,875	25,238	XXX	XXX
Roughage	31,171	19,291	XXX	XXX
Food crops	19,832	23,604	24,597	27,497
Grains	19,227	22,557	XXX	XXX
Vegetables, fruits, sugar	340	772	XXX	XXX
Other food crops	265	275	XXX	XXX
Oil, fiber & misc. crops	5,129	6,438	6,299	6,665
Oil	3,432	4,742	XXX	XXX
Cotton	--	--	XXX	XXX
Tobacco & miscellaneous	1,697	1,696	XXX	XXX
Total cropland harvested and used for pasture 2/	88,007	74,571	76,979	88,751

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-9.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Arkansas-White-Red Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 Acres	1,000 Acres	1,000 Acres	1,000 Acres
Feed crops	21,096	18,163	20,034	18,442
Grains	8,055	7,183	XXX	XXX
Roughage	13,041	10,980	XXX	XXX
Food crops	13,551	13,318	13,577	14,842
Grains	13,277	13,014	XXX	XXX
Vegetables, fruits, sugar	210	261	XXX	XXX
Other food crops	64	43	XXX	XXX
Oil, fiber & misc. crops	4,169	4,253	4,197	4,324
Oil	1,755	2,585	XXX	XXX
Cotton	2,162	1,416	XXX	XXX
Tobacco & miscellaneous	252	252	XXX	XXX
Total cropland harvested and used for pasture 2/	38,816	35,734	37,808	37,608

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-10.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Upper Mississippi Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 Acres	1,000 Acres	1,000 Acres	1,000 Acres
Feed crops	50,928	39,307	39,627	43,014
Grains	33,159	22,292	XXX	XXX
Roughage	17,769	17,015	XXX	XXX
Food crops	2,500	2,070	2,299	2,609
Grains	2,024	1,418	XXX	XXX
Vegetables, fruits, sugar	432	607	XXX	XXX
Other food crops	44	45	XXX	XXX
Oil, fiber & misc. crops	8,121	12,999	12,653	13,083
Oil	7,930	12,810	XXX	XXX
Cotton	---	---	XXX	XXX
Tobacco & miscellaneous	191	189	XXX	XXX
Total cropland harvested and used for pasture 2/	61,549	54,376	54,579	58,706

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-11.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Rio Grande Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 Acres	1,000 Acres	1,000 Acres	1,000 Acres
Feed crops	1,225	875	955	1,166
Grains	249	172	XXX	XXX
Roughage	976	703	XXX	XXX
Food crops	325	202	184	192
Grains	28	---	XXX	XXX
Vegetables, fruits, sugar	253	175	XXX	XXX
Other food crops	44	27	XXX	XXX
Oil, fiber & misc. crops	637	674	714	773
Oil	---	---	XXX	XXX
Cotton	627	664	XXX	XXX
Tobacco & miscellaneous	10	10	XXX	XXX
Total cropland harvested and used for pasture 2/	2,161	1,725	1,827	2,105

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-12.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Texas-Gulf Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 Acres	1,000 Acres	1,000 Acres	1,000 Acres
Food crops	16,561	15,735	17,679	17,182
Grains	7,806	5,043	XXX	XXX
Roughage	8,755	10,692	XXX	XXX
Food crops	2,180	2,013	1,977	2,066
Grains	1,892	1,788	XXX	XXX
Vegetables, fruits, sugar	261	211	XXX	XXX
Other food crops	27	14	XXX	XXX
Oil, fiber & misc. crops	5,379	4,383	4,495	4,880
Oil	320	369	XXX	XXX
Cotton	4,967	3,922	XXX	XXX
Tobacco & miscellaneous	92	92	XXX	XXX
Total cropland harvested and used for pasture 2/	24,120	22,131	24,151	24,128

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-13.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Upper Colorado Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 Acres	1,000 Acres	1,000 Acres	1,000 Acres
Feed crops	1,439	1,139	1,237	1,313
Grains	130	110	XXX	XXX
Roughage	1,309	1,029	XXX	XXX
Food crops	279	297	316	360
Grains	141	204	XXX	XXX
Vegetables, fruits, sugar	28	53	XXX	XXX
Other food crops	110	40	XXX	XXX
Oil, fiber & misc. crops	11	10	10	10
Oil	---	---	XXX	XXX
Cotton	---	---	XXX	XXX
Tobacco & miscellaneous	11	10	XXX	XXX
Total cropland harvested and used for pasture 2/	1,729	1,446	1,563	1,683

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-14.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Lower Colorado Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	800	899	919	1,016
Grains	267	208	XXX	XXX
Roughage	533	691	XXX	XXX
Food crops	197	212	202	212
Grains	78	64	XXX	XXX
Vegetables, fruits, sugar	109	136	XXX	XXX
Other food crops	10	12	XXX	XXX
Oil, fiber & misc. crops	388	455	476	502
Oil	--	1	XXX	XXX
Cotton	370	436	XXX	XXX
Tobacco & miscellaneous	18	18	XXX	XXX
Total cropland harvested and used for pasture 2/	1,343	1,524	1,555	1,688

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-15.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Great Basin Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	1,706	1,523	1,609	1,938
Grains	229	187	XXX	XXX
Roughage	1,477	1,336	XXX	XXX
Food crops	404	409	452	511
Grains	332	292	XXX	XXX
Vegetables, fruits, sugar	64	109	XXX	XXX
Other food crops	8	8	XXX	XXX
Oil, fiber & misc. crops	28	28	28	28
Oil	--	--	XXX	XXX
Cotton	--	--	XXX	XXX
Tobacco & miscellaneous	28	28	XXX	XXX
Total cropland harvested and used for pasture 2/	2,138	1,960	2,089	2,477

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-16.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, California Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	7,024	5,344	5,182	5,733
Grains	2,091	1,703	XXX	XXX
Roughage	4,933	3,641	XXX	XXX
Food crops	3,203	3,337	3,591	4,122
Grains	649	605	XXX	XXX
Vegetables, fruits, sugar	2,298	2,398	XXX	XXX
Other food crops	256	334	XXX	XXX
Oil, fiber& misc. crops	1,079	1,119	1,092	1,166
Oil	--	4	XXX	XXX
Cotton	821	857	XXX	XXX
Tobacco & miscellaneous	258	258	XXX	XXX
Total cropland harvested and used for pasture 2/	11,306	9,800	9,865	11,021

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 3-17.--Acreages of major crops, 1959 with preliminary projections to 1980, 2000 and 2020, Columbia-North Pacific Water Resource Region

Land use 1/	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Feed crops	7,695	7,912	8,360	9,340
Grains	2,134	1,700	XXX	XXX
Roughage	5,561	6,212	XXX	XXX
Food crops	5,279	6,560	6,740	7,396
Grains	3,874	4,726	XXX	XXX
Vegetables, fruits, sugar	639	1,049	XXX	XXX
Other food crops	766	785	XXX	XXX
Oil, fiber & misc. crops	778	778	778	778
Oil	--	--	XXX	XXX
Cotton	--	--	XXX	XXX
Tobacco & miscellaneous	778	778	XXX	XXX
Total cropland harvested and used for pasture 2/	13,752	15,250	15,878	17,514

1/ Commodities included in each group are as follows:
Feed grains: Corn, sorghum grain, oats, barley;
Roughages: Hay, silage, forage, cropland pasture;
Food grains: Wheat, rye, rice;
Vegetables, fruits, sugar: Vegetables for fresh market and processing, citrus and noncitrus fruits, nuts, sugar beets, sugar cane;
Other food crops: Potatoes, sweet potatoes, dry beans, dry peas;
Oil crops: Soybeans, peanuts, flaxseed.

2/ Total acreage of feed crops, food crops and oil, fiber and miscellaneous crops exceeds the acreage of total cropland harvested and used for pasture due to double cropping.

Appendix Table 4-1.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, North Atlantic Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	15,628	11,957	11,944	12,826
Cropland idle, fallow and crop failure	1,971	3,766	2,699	254
Total cropland	17,599	15,723	14,634	13,080
Pasture and range	7,980	8,776	8,170	7,306
Forest and woodland	66,740	63,920	59,495	53,183
Total agricultural 2/	92,319	88,419	82,299	73,569
Other land	13,935	17,835	23,955	32,685
Land area	106,254	106,254	106,254	106,254

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 208,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--401,000; 2000--473,000; and 2020---517,000.

Appendix Table 4-2.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, South Atlantic Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	24,652	19,316	19,451	22,428
Cropland idle, fallow and crop failure	4,935	8,564	7,612	3,774
Total cropland	29,587	27,880	27,063	26,202
Pasture and range	16,707	17,177	16,671	16,137
Forest and woodland	108,884	105,971	102,854	99,569
Total agricultural 2/	155,178	151,028	146,588	141,908
Other land	12,018	16,168	20,608	25,288
Land area	167,196	167,196	167,196	167,196

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 560,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--1,536,000; 2000--1,728,000; and 2020--1,866,000.

Appendix Table 4-3.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Ohio Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	35,344	30,323	29,167	30,754
Cropland idle, fallow and crop failure	3,940	5,716	5,430	2,300
Total cropland	39,284	36,039	34,597	33,054
Pasture and range	12,483	14,011	13,449	12,847
Forest and woodland	40,227	38,894	37,338	35,673
Total agricultural 2/	91,994	88,944	85,384	81,574
Other land	10,170	13,220	16,780	20,590
Land area	102,164	102,164	102,164	102,164

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 30,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--73,000; 2000--109,000; and 2020--142,000.

Appendix Table 4-4.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Tennessee Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	5,506	4,577	4,765	5,153
Cropland idle, fallow and crop failure	988	1,375	1,064	541
Total cropland	6,504	5,952	5,829	5,694
Pasture and range	2,723	3,113	3,049	2,979
Forest and woodland	16,370	16,082	15,749	15,384
Total agricultural 2/	25,597	25,147	24,627	24,057
Other land	1,724	2,174	2,694	3,264
Land area	27,321	27,321	27,321	27,321

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 13,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--62,000; 2000--82,000; and 2020--94,000.

Appendix Table 4-5.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Great Lakes Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	23,939	23,144	22,824	21,055
Cropland idle, fallow and crop failure	2,822	1,733	520	121
Total cropland	26,761	24,877	23,344	21,176
Pasture and range	4,769	5,280	4,952	7,983
Forest and woodland	39,583	37,856	35,517	28,714
Total agricultural 2/	71,113	68,013	63,813	57,873
Other land	11,189	14,289	18,489	24,429
Land area	82,302	82,302	82,302	82,302

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 82,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--145,000; 2000--228,000; and 2020--275,000.

Appendix Table 4-6.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Upper Mississippi Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	62,553	54,376	54,579	58,706
Cropland idle, fallow and crop failure	2,713	7,086	5,479	390
Total cropland	65,266	61,462	60,058	59,096
Pasture and range	12,358	14,562	14,229	13,967
Forest and woodland	24,322	23,822	23,279	22,103
Total agricultural 2/	101,946	99,846	97,566	95,166
Other land	10,057	12,157	14,437	16,837
Land area	112,003	112,003	112,003	112,003

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 55,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--153,000; 2000--228,000; and 2020--290,000.

Appendix Table 4-7.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Souris-Red Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	15,226	14,219	14,507	14,462
Cropland idle, fallow and crop failure	5,295	5,765	5,372	4,319
Total cropland	20,521	19,984	19,879	19,781
Pasture and range	4,075	4,532	4,508	4,486
Forest and woodland	6,065	6,045	6,014	5,984
Total agricultural 2/	30,661	30,561	30,401	30,251
Other land	2,882	2,982	3,142	3,292
Land area	33,543	33,543	33,543	33,543

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 9,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--24,000; 2000--37,000; and 2020--46,000.

Appendix Table 4-8.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Missouri Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	89,443	74,751	76,979	88,751
Cropland idle, fallow and crop failure	25,682	31,274	28,432	16,192
Total cropland	115,125	105,845	105,411	104,943
Pasture and range	166,843	175,223	174,505	173,731
Forest and woodland	31,363	31,263	31,135	30,997
Total agricultural 2/	313,331	312,331	311,051	309,671
Other land	16,099	17,099	18,379	19,759
Land area	329,430	329,430	329,430	329,430

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 5,802,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--7,160,000; 2000--7,375,000; and 2020--7,423,000.

Appendix Table 4-9.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Arkansas-White-Red Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	39,449	35,734	37,808	37,608
Cropland idle, fallow and crop failure	11,504	10,618	8,220	8,069
Total cropland	50,953	46,352	46,028	45,677
Pasture and range	59,374	63,194	62,751	69,350
Forest and woodland	44,996	44,677	44,364	37,946
Total agricultural 2/	155,323	154,223	153,143	151,973
Other land	15,109	16,209	17,289	18,459
Land area	170,432	170,432	170,432	170,432

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 2,806,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--4,451,000; 2000--4,761,000; and 2020--4,877,000.

Appendix Table 4-10.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Lower Mississippi Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	13,362	14,099	13,747	13,375
Cropland idle, fallow and crop failure	1,486	111	110	109
Total cropland	14,848	14,210	13,857	13,484
Pasture and range	3,538	4,165	4,573	6,473
Forest and woodland	17,695	17,056	16,121	13,664
Total agricultural 2/	36,081	35,431	34,551	33,621
Other land	5,583	6,233	7,113	8,043
Land area	41,664	41,664	41,664	41,664

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 625,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--1,302,000; 2000--1,684,000; and 2020--1,925,000.

Appendix Table 4-11.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Rio Grande Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	2,196	1,725	1,827	2,105
Cropland idle, fallow and crop failure	609	722	601	304
Total cropland	2,805	2,447	2,428	2,409
Pasture and range	59,735	59,562	59,092	58,622
Forest and woodland	14,108	13,989	13,878	13,767
Total agricultural 2/	76,648	75,998	75,398	74,798
Other land	10,885	11,535	12,135	12,735
Land area	87,533	87,533	87,533	87,533

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 1,638,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--1,783,000; 2000--1,801,000; and 2020--1,810,000.

Appendix Table 4-12.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Texas-Gulf Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	24,514	22,131	24,151	24,128
Cropland idle, fallow and crop failure	3,978	4,284	1,782	1,310
Total cropland	28,492	26,415	25,933	25,438
Pasture and range	55,593	56,399	55,372	59,647
Forest and woodland	25,119	24,740	24,289	18,499
Total agricultural 2/	109,204	107,554	105,594	103,584
Other land	8,377	10,027	11,987	13,997
Land area	117,581	117,581	117,581	117,581

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 4,168,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--5,296,000; 2000--5,331,000; and 2020--5,326,000.

Appendix Table 4-13.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Upper Colorado Water Resource Regions

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	1,757	1,446	1,563	1,683
Cropland idle, fallow and crop failure	284	270	151	28
Total cropland	2,041	1,716	1,714	1,711
Pasture and range	32,173	32,407	32,361	32,309
Forest and woodland	22,337	22,278	22,246	22,211
Total agricultural 2/	56,551	56,401	56,321	56,231
Other land	8,457	8,607	8,687	8,777
Land area	65,008	65,008	65,008	65,008

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 1,361,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--1,780,000; 2000--1,766,000; and 2020--1,788,000.

Appendix Table 4-14.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Lower Colorado Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	1,365	1,524	1,555	1,688
Cropland idle, fallow and crop failure	441	247	206	63
Total cropland	1,806	1,771	1,761	1,751
Pasture and range	57,783	57,548	57,233	56,918
Forest and woodland	28,602	28,472	28,317	28,162
Total agricultural 2/	88,191	87,791	87,311	86,831
Other land	10,593	10,993	11,473	11,953
Land area	98,784	98,784	98,784	98,784

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 1,219,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--1,173,000; 2000--1,159,000; and 2020--1,145,000.

Appendix Table 4-15.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Great Basin Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	2,173	1,960	2,089	2,477
Cropland idle, fallow and crop failure	684	686	549	152
Total cropland	2,857	2,646	2,638	2,629
Pasture and range	56,996	56,985	56,815	56,624
Forest and woodland	20,927	20,849	20,787	20,717
Total agricultural 2/	80,780	80,480	80,240	79,970
Other land	6,409	6,709	6,949	7,219
Land area	87,189	87,189	87,189	87,189

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 1,426,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--1,609,000; 2000--1,642,000; and 2020--1,652,000.

Appendix Table 4-16.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, California Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	11,491	9,800	9,865	11,021
Cropland idle, fallow and crop failure	2,075	2,777	1,991	96
Total cropland	13,566	12,577	11,856	11,117
Pasture and range	22,900	22,087	20,815	19,511
Forest and woodland	45,418	43,170	40,683	38,136
Total agricultural 2/	81,884	77,834	73,354	68,764
Other land	22,147	26,197	30,677	35,267
Land area	104,031	104,031	104,031	104,031

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 7,627,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--9,087,000; 2000--9,849,000; and 2020--10,264,000.

Appendix Table 4-17.--Land utilization, 1959 with preliminary projections to 1980, 2000 and 2020, Columbia-North Pacific Water Resource Region

Land use	1959	Projections		
		1980	2000	2020
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Agriculture:				
Cropland harvested and used for pasture 1/	13,976	15,250	15,878	17,514
Cropland idle, fallow and crop failure	5,492	3,489	2,709	2,624
Total cropland	19,468	18,739	18,587	20,138
Pasture and range	54,101	54,249	53,806	51,627
Forest and woodland	84,497	83,828	83,143	82,421
Total agricultural 2/	158,066	156,816	155,536	154,186
Other land	11,255	12,505	13,785	15,135
Land area	169,321	169,321	169,321	169,321

1/ An upward adjustment of about 1.6 percent in the acreage of cropland harvested reported by the Census of Agriculture was made to conform to estimates in "Major Uses of Land and Water in the United States", Agricultural Economic Report No. 13, U.S. Department of Agriculture.

2/ Includes 5,014,000 acres of irrigated land in 1959 (Census of Agriculture) and assumed acreages of irrigated land in projection years as follows: 1980--5,982,000; 2000--6,248,000; and 2020--6,327,000.

Appendix Table 5.--Production of saw logs, veneer logs, and miscellaneous industrial timber products, 1962 with preliminary projections to 1980, 2000, and 2020, Water Resource Regions 1/

Water Resource Region	1962	Projections		
		1980	2000	2020
	Million cu. ft.	Million cu. ft.	Million cu. ft.	Million cu. ft.
North Atlantic	390	500	600	680
South Atlantic-Gulf	1,105	1,300	2,200	2,600
Ohio 2/	275	350	560	620
Great Lakes	160	220	260	280
Upper Mississippi	105	170	270	420
Souris-Red	5	10	20	30
Missouri	90	110	130	150
Arkansas-White-Red	365	450	620	800
Lower Mississippi	180	240	320	350
Rio Grande	20	60	90	90
Texas-Gulf	135	190	340	360
Upper Colorado	35	100	190	190
Lower Colorado	65	110	130	130
Great Basin	3/	3/	10	10
California	905	900	750	750
Columbia-North Pacific	2,680	3,400	3,300	3,270
TOTAL	6,515	8,110	9,790	10,730

1/ The round timber products harvested from the forests and used as the wood raw material in the Lumber and Wood Products Industries (Major group 24, as defined in the Standard Industrial Classification Manual). Saw logs are used to manufacture lumber; veneer logs to manufacture veneer and plywood; and miscellaneous industrial timber products a host of items such as cooperage, utility poles, and charcoal. The end products of the lumber and wood products industries have been converted to the roundwood products harvested from the forests, i.e., saw logs, veneer logs, and miscellaneous industrial products, so that they could be aggregated and used as a measure of the timber input into the industry. The projected timber inputs are the base for the projections of employment and payrolls shown in preceeding tables.

2/ Excludes the Tennessee Valley.

3/ Less than 5 million cubic feet.

Appendix Table 6.--Pulpwood production, 1962 with preliminary projections to 1980, 2000 and 2020, Water Resource Regions 1/

Water Resource Regions	1962	Projections		
		1980	2000	2020
		Million cords	Million cords	Million cords
North Atlantic	4.9	8.7	12.8	14.6
South Atlantic-Gulf	17.6	26.6	47.7	50.9
Ohio 2/	0.8	1.6	3.5	5.6
Great Lakes	2.3	3.6	5.3	6.0
Upper Mississippi	0.9	1.8	2.6	3.0
Souris-Red	0.3	0.4	0.6	0.7
Missouri	0.1	0.9	2.0	2.5
Arkansas-White-Red	3.2	7.3	12.9	14.2
Lower Mississippi	1.1	3.5	6.6	6.8
Rio Grande	--	0.3	0.5	0.8
Texas-Gulf	1.6	3.9	7.0	7.0
Upper Colorado	3/	0.4	1.0	1.5
Lower Colorado	0.1	0.2	0.4	0.7
Great Basin	--	0.2	0.4	0.6
California	0.6	2.5	4.0	4.3
Columbia-North Pacific	8.2	16.5	21.3	23.0
TOTAL	41.7	78.4	128.6	142.2

1/ The wood raw material used in the Pulp, Paper, and Allied Products Industries (Major group 26, as defined in the Standard Industrial Classification Manual) for the manufacture of wood pulp. The volume shown include roundwood harvested directly from the forests and plant by-products, obtained from other wood manufacturing plants such as sawmills and veneer and plywood plants, and used in the manufacture of wood pulp. The end products of the pulp and paper industries have been converted to pulpwood--the timber input into the industry. The projected pulpwood timber inputs are the base for the projections of employment and payrolls shown in preceeding tables.

2/ Excludes the Tennessee Valley.

3/ Less than 100,000 cords.